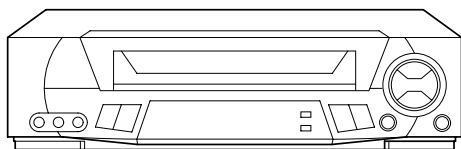
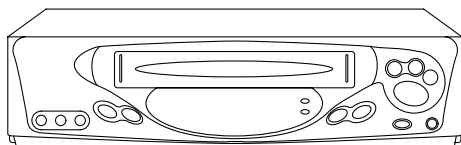


SHARP SERVICE MANUAL

S10V4VC-A412U

VHS VIDEO CASSETTE RECORDER**VC-A412U/H812U****VC-A413U/H813U****VC-A412U
VC-A413U
VC-H812U
VC-H813U**

MODELS

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified be used.

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VC-A412U/A413U/H812U Models for Canada
VC-A412U/A413U/H812U/H813U Models for U.S.A.

SHARP CORPORATION

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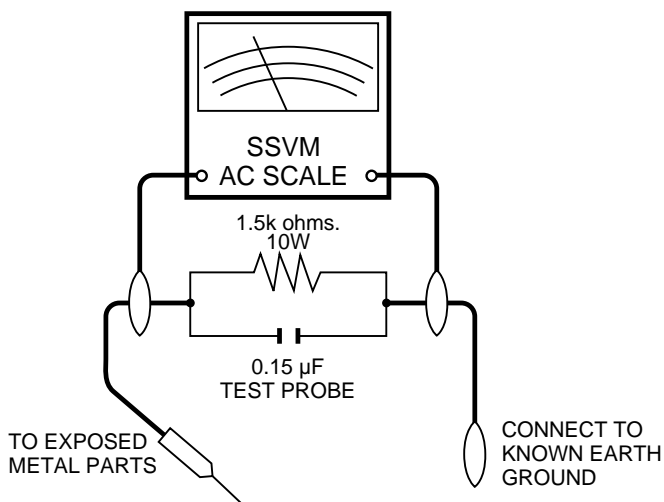
IMPORTANT SERVICE NOTES

BEFORE RETURNING THE VIDEO CASSETTE RECORDER

Before returning the video cassette recorder to the user, perform the following safety checks.

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the video cassette recorder.
2. Inspect all protective devices such as non-metallic control knobs, insulation materials, cabinet backs, adjustment and compartment covers or shields, isolation resistor/capacitor networks, mechanical insulators etc.
3. To be sure that no shock hazard exists, check for current in the following manner.
 - Plug the AC line cord directly into a 120 volt AC outlet (Do not use an isolation transformer for this test).
 - Using two clip leads, connect a 1.5k ohm, 10 watt resistor paralleled by a 0.15 μ F capacitor in series with all exposed metal cabinet parts and a known earth ground, such as a water pipe or conduit.
 - Use an SSVM or VOM with 1000 ohm per volt, or higher, sensitivity or measure the AC voltage drop across the resistor (See Diagram).
 - Move the resistor connection to earth exposed metal part having a return path to the chassis (antenna, metal cabinet, screw heads, knobs and control shafts,

etc.) and measure the AC voltage drop across the resistor. Reverse the AC plug on the set and repeat AC voltage measurements for each exposed part. Any reading of 0.45V rms (this corresponds to 0.3mA rms AC.) or more is excessive and indicates a potential shock hazard which must be corrected before returning the video cassette recorder to the owner.



WARNING : TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.



CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

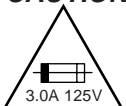


This symbol warns the user of uninsulated voltage within the unit that can cause dangerous electric shocks.



This symbol alerts the user that there are important operating and maintenance instructions in the literature accompanying this unit.

CAUTION:



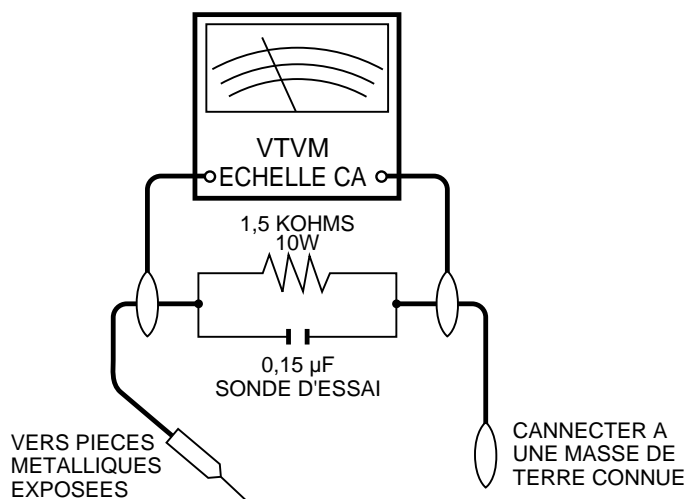
This symbol mark means fast operating fuse. For continued protection against risk of fire, replace only with same type fuse F901 (3.0A, 125V).

NOTES DE SERVICE IMPORTANTES**AVANT DE RENDRE LE MAGNETOSCOPE**

Avant de rendre le magnétoscope à l'utilisateur, effectuer les vérifications de sécurité suivantes.

1. Vérifier toutes les gaines de fil pour être sûr que les fils ne sont pas pincés ou que le matériel n'est pas coincé entre le châssis et les autres pièces métalliques dans le magnétoscope.
2. Vérifier tous les dispositifs de protection tels que les boutons de commande non métalliques, les matériaux d'isolement, le dos du coffret, les couvercles de compartiment et ajustement ou les boucliers, les réseaux de résistance / condensateur d'isolement, les isolateurs mécaniques, etc.
3. Pour être sûr qu'il n'y a aucun risque de choc électrique, vérifier le courant de fuite de la manière suivante.
 - Brancher le cordon d'alimentation secteur directement dans une prise de courant de 120 volts. (Ne pas utiliser de transformateur d'isolement pour cet essai).
 - Utiliser deux fils à pinces et connecter une résistance de 10 watts 1,5 kohm en parallèle avec un condensateur de 0,15 μ F en série avec des pièces du coffret métallique exposées et une masse de terre connue telle qu'un tuyau ou un conduit d'eau.
 - Utiliser un VTVM ou VOM avec une sensibilité de 1000 ohms par volt ou plus ou mesurer la chute de tension CA entre la résistance (voir diagramme).
 - Déposer la connexion de la résistance à toutes les

pièces métalliques exposées ayant un parcours de retour au châssis (connexions d'antenne, coffret métallique, têtes de vis, boutons et arbres de commande, etc.) et mesurer la chute de tension CA entre la résistance. Inverser la fiche CA (une fiche intermédiaire non polarisée doit être utilisée à seule fin de faire ces vérifications.) sur l'appareil et répéter les mesures de tension CA pour chaque pièce métallique exposée. Toute lecture de 0,45 Vrms (ceci correspond à 0,3 mArms CA) ou plus est excessive et signale un danger de choc qui doit être corrigé avant de rendre le magnétoscope à son utilisateur.



ATTENTION: POUR REDUIRE LES RISQUES D'INCENDIE OU DE CHOC ELECTRIQUE, NE PAS EXPOSER CET APPAREIL A LA PLUIE OU A L'HUMIDITE.

**ATTENTION**

RISQUE DE CHOC ELECTRIQUE
NE PAS OUVRIR



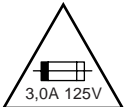
ATTENTION: AFIN DE REDUIRE LES RISQUES DE CHOC ELECTRIQUE, NE PAS RETIRER LE COUVERCLE, AUCUN ORGANE INTERNE NE PEUT ETRE REPARÉ PAR L'UTILISATEUR. CONFIER L'APPAREIL A UN DEPANNEUR QUALIFIE.



Ce symbole signale à l'utilisateur la présence d'une tension non isolée à l'intérieur de l'appareil qui peut être la cause de secousses électriques dangereuses.



Ce symbole avertit l'utilisateur que des instructions importantes relatives à l'utilisation et à l'entretien se trouvent dans le manuel accompagnant l'appareil.

PRECAUTION:

Cette marque indique le fusible à action instantanée. Pour la protection continue contre le risque d'incendie, ne remplacer que par le fusible type F901 (3,0A, 125V).

PRECAUTIONS IN PART REPLACEMENT

When servicing the unit with power on, be careful to the section marked white all over.

This is the primary power circuit which is live.

When checking the soldering side in the tape travel mode, make sure first that the tape has been loaded and then turn over the PWB with due care to the primary power circuit.

Make readjustment, if needed after replacement of part, with the mechanism and its PWB in position in the main frame.

(1) Start and end sensors: Q701 and Q702

Insert the sensor's projection deep into the upper hole of the holder. Referring to the PWB, fix the sensors tight enough.

(2) Photocoupler: IC901

Refer to the symbol on the PWB and the anode marking of the part.

(3) Cam switches A and B: D708 and D709.

Adjust the notch of the part to the white marker of the symbol on the PWB. Do not allow any looseness.

(4) Take-up and supply sensors: D707 and D706.

Be careful not to confuse the setting direction of the parts in reference to the symbols on the PWB. Do not allow any looseness.

1. GENERAL INFORMATION

1-1 FEATURES

Only for VC-H812U, VC-H813U

- **VHS** Hi-Fi Stereo Sound
- Built-in MTS (Multi-channel TV Sound) Decoder

Common Features

- 400 Times Rewind Speed to Fast Forward and Rewind.
- EZ Set Up
- S-VHS Quasi Playback
- Double-Azimuth 4-Heads
- 19 μ Clear Picture System (in EP mode)
- HQ System for Better Resolution and Color Reproduction
- Multi-Language (English/Spanish/French) OSD (On Screen Display) with Menu Screen Guidance
- 181-channel PLL Quartz Synthesized Random Access Tuner with Automatic Channel Setting
- Quick Start with Full Loading Mechanism
- 1-Year, 8 Event Programmable Timer
- Simple Recording Timer
- Universal Remote Control
- Sharp Super Picture
- Field-Still/Variable Slow/Frame Advance

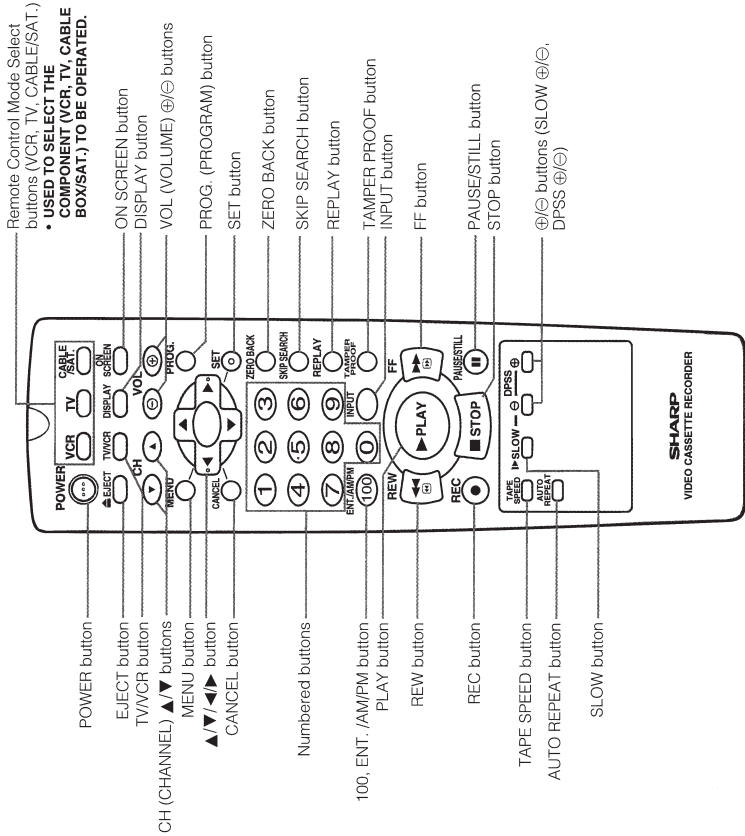
- Real-Time Counter
- Automatic Daylight Saving-Time (D.S.T.) Adjustment
- Blue Screen Noise Elimination
- Auto Tracking Control System
- Digital Program Search System (DPSS)
- Skip Search
- Instant Replay
- Auto Zero Back
- Recorded Section Auto Repeat
- Full Automatic Playback
- Tamper Proof
- Up to 8 Hours of Recording and Playback (with T-160 cassette)
- Automatic Head Cleaning System
- Built in Front AV Jacks

1-2 SPECIFICATIONS

- Format: VHS NTSC Standard
 - Video Recording System: Rotary, Slant Azimuth Two-Head Helical Scan
 - Number of Video Heads: 4
 - Video Signal Standard: NTSC Color System
 - Audio Recording System: 1 Stationary Head for Linear Audio
2 Rotary Heads for Hi-Fi stereo (Only Hi-Fi models)
 - Tape Width: 12.7 mm (1/2 inch)
 - Tape Speed: (SP) 33.35 mm/sec. (1.31 i.p.s.)
(LP) 16.67 mm/sec. (0.66 i.p.s.) (playback only)
(EP) 11.12 mm/sec. (0.44 i.p.s.)
 - Maximum Recording Time: (SP) 160 min. (T-160)
(EP) 480 min. (T-160)
 - Channel Coverage: VHF 2-13
UHF 14-69
CATV 1-125
 - Antenna Input: 75 Ohm
 - Video Input: 0.5 to 2.0 Vp-p, 75 Ohm unbalanced
 - Video Output: 1.0 Vp-p, 75 Ohm unbalanced
 - Audio Input: -8 dBs, 47 kOhm unbalanced (0 dBs = 0.775 Vrms)
 - Audio Output: -8 dBs, 1 kOhm unbalanced (0 dBs = 0.775 Vrms)
 - Hi-Fi Audio (Only for Hi-Fi models): *Dynamic Range*: 90 dB
Frequency Response: 20 Hz-20 kHz
 - Memory Backup: 60 seconds
 - Operating Temperature: 5°C to 40°C (41°F to 104°F)
 - Storage temperature: -20°C to 60°C (-4°F to 140°F)
 - Power Source: 120 V AC, 60 Hz
 - Power Consumption: 18 W
 - Weight: 2.8 kg (6.2 lbs)
 - Dimensions (approx.): 360 (W) x 92.5 (H) x 256 (D) mm (14-3/16" x 3-41/64" x 10-5/64") (VC-A412U/H812U)
360 (W) x 92.5 (H) x 254.5 (D) mm (14-3/16" x 3-41/64" x 10-1/32") (VC-A413U/H813U)
 - Accessories included: 75 ohm coaxial cable, Operation manual, Infrared remote control, Battery (2 pcs.), Warranty Card
- Note: Specifications are subject to change without notice.

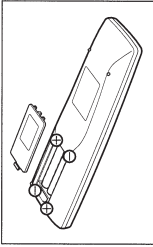
1-3 LOCATION OF MAJOR COMPONENTS AND CONTROL

Remote Control



Inserting the Batteries

Make sure that the batteries have been properly installed first. Fit two batteries type "AA". If the remote control stops working, fit new batteries. Ensure the batteries are fitted correctly, matching the polarities (⊕/⊖) indicated in the remote control.

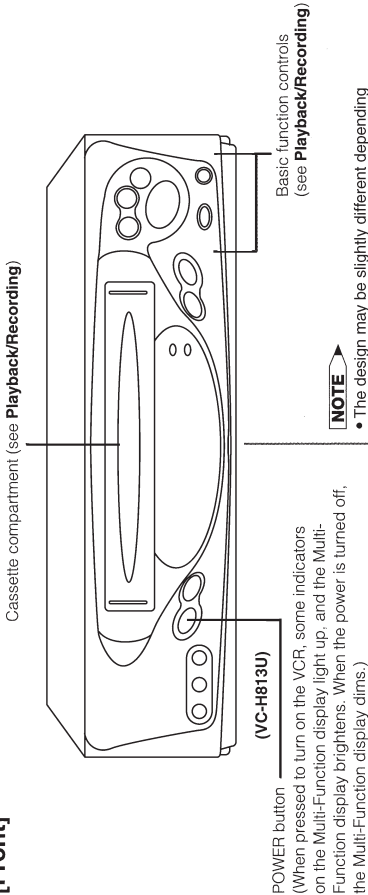


NOTE

- After changing the batteries in the remote control, the code settings for the TV, cable box and Digital Satellite Receiver must be re-entered.
- Do not subject the remote control to shock, water or excessive humidity.
- The remote control may not function if the VCR sensor is in direct sunlight or any other strong light.
- Incorrect use of batteries may cause them to leak or burst. Read the battery warnings and use the batteries properly.
- Do not mix old and new batteries, or mix brands in use.
- Remove the batteries if the remote control will not be operated for an extended period of time.
- If the remote control does not function properly when new batteries are installed, remove the batteries and keep pressing any button for 10 seconds before re-installing them.

Major Components of Your VCR

[Front]



Multi-Function Display (explained throughout the operation instructions)

When the power is on, each time **DISPLAY** is pressed, the Multi-Function display changes as follows:

1 Channel setting → 2 Tape counter → 3 Clock



NOTE

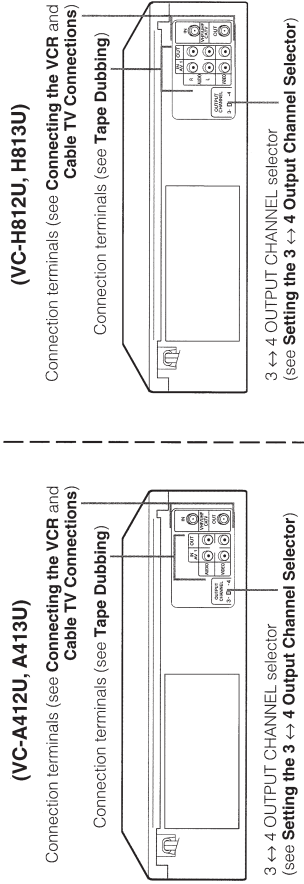
- Tape counter is displayed during playback, fast forward or rewind operation.
- When the power is turned off, the clock is displayed and the Multi-Function display becomes darker.

Display	Symbol	Function Status	Display	Symbol	Function Status
STOP	—	Stop	FF	—	Fast forward
PLAY	▶	Play	REW	—	Rewind
PAUSE	⏸	Video Search, Slow, Still, Frame Advance	PAUSE	⏸	Rec Pause
REC	REC	Record	—	⏸	Cassette-in
—	—	Tamper Proof Active	—	—	Unit in VCR mode

NOTE

- The display will return to the original mode (counter or clock display) 3 seconds after the VCR enters the operation mode.

[Rear]



2. DISASSEMBLY AND REASSEMBLY

2-1 DISASSEMBLY OF MAJOR BLOCKS

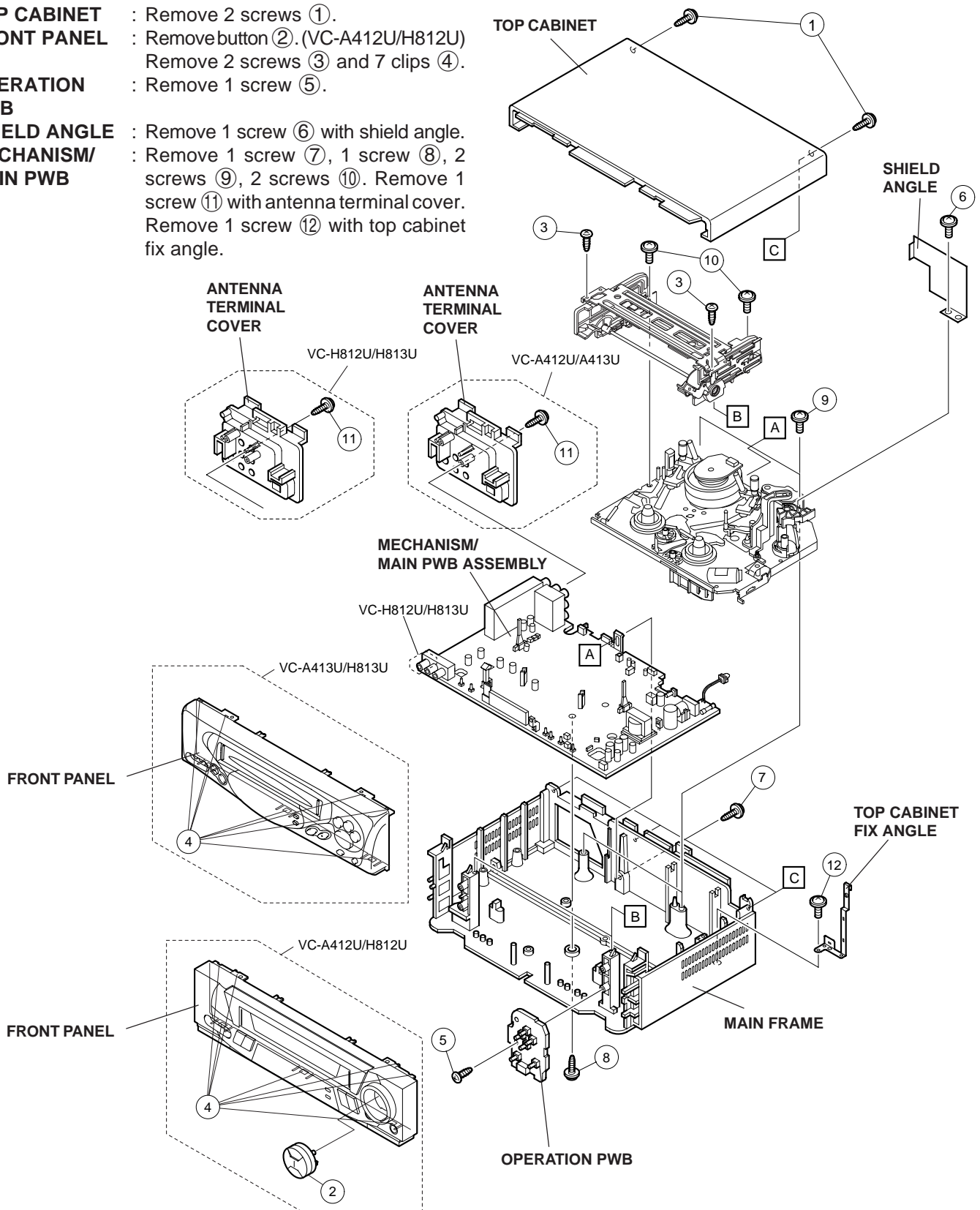
TOP CABINET : Remove 2 screws ①.

FRONT PANEL : Remove button ②. (VC-A412U/H812U)
Remove 2 screws ③ and 7 clips ④.

OPERATION PWB : Remove 1 screw ⑤.

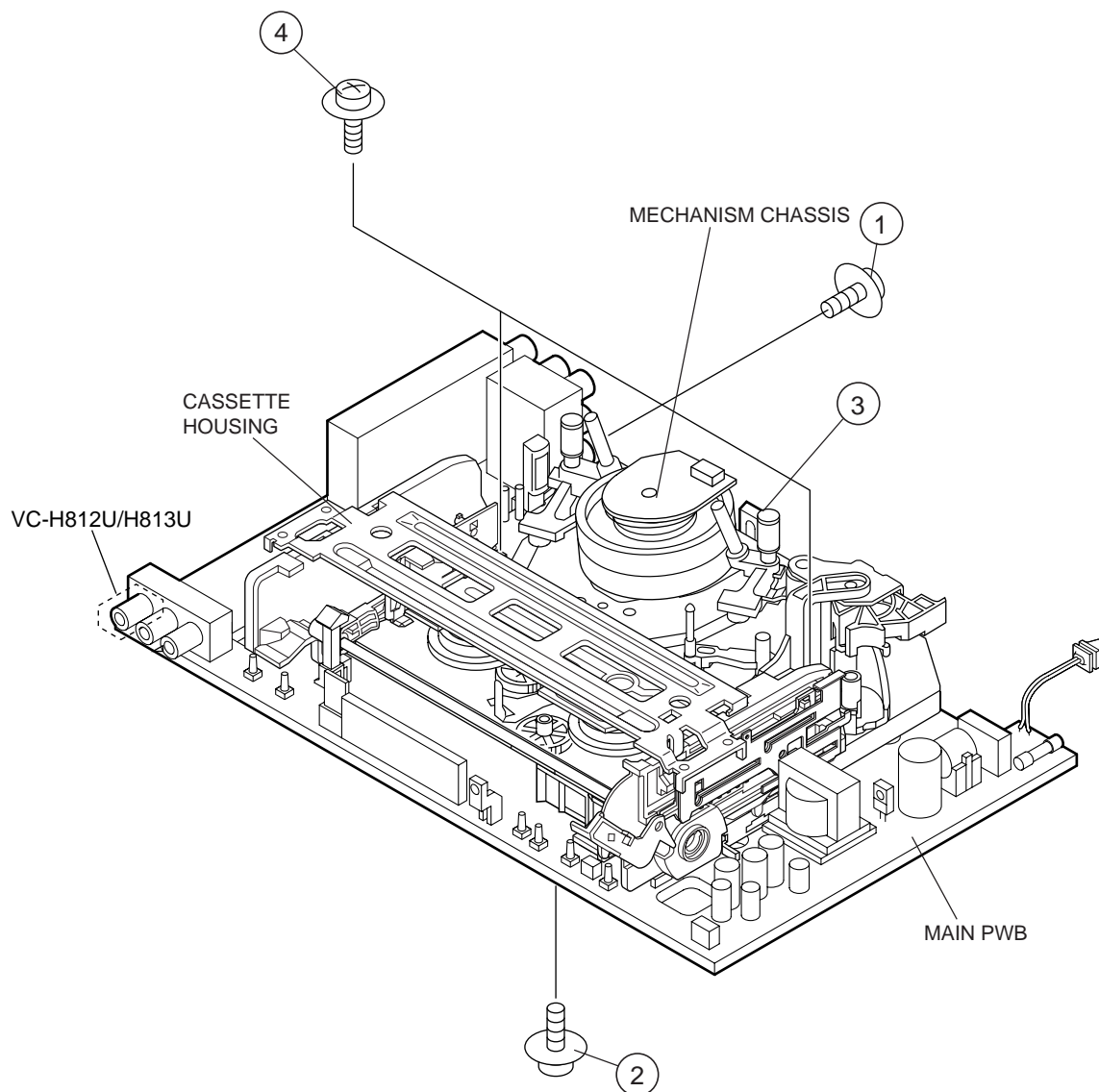
SHIELD ANGLE : Remove 1 screw ⑥ with shield angle.

MECHANISM/MAIN PWB : Remove 1 screw ⑦, 1 screw ⑧, 2 screws ⑨, 2 screws ⑩. Remove 1 screw ⑪ with antenna terminal cover.
Remove 1 screw ⑫ with top cabinet fix angle.



2-2 DISASSEMBLING THE MECHANISM/MAIN PWB ASSEMBLY

1. When removing the mechanism from the main PWB, remove the antenna cover 1 screw ①, and remove the antenna cover.
Remove the PWB bottom plate 1 screw ②.
Remove the FFC cable (AA, AD, AH) ③ which connecting the PWB and the mechanism.
Take out vertically the mechanism so that it does not damage the adjacent parts.
2. Removing the mechanism and cassette housing.
Remove 2 screws ④ fixing the cassette housing to the mechanism, and remove the cassette housing.



2-3 CARES WHEN REASSEMBLING

INSTALLING THE CASSETTE HOUSING

When the cassette housing is installed on the mechanism, the initial setting is essential condition.

There are two initial setting methods, namely electrical and mechanical.

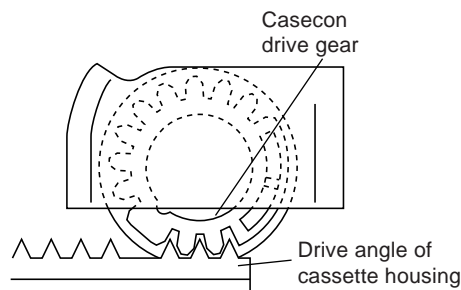
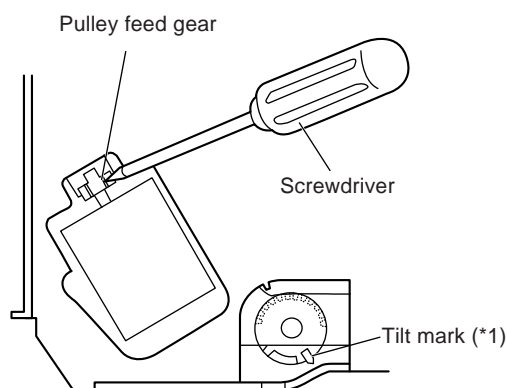
1. Electrical initial setting

So as to perform initial setting of mechanism execute the Step 1 of Installation of cassette housing. After ascertaining the return to the initial setting position (*1) install the

cassette housing. (Conditions: When mechanism and PWB have been installed)

2. Mechanical initial setting

Feed the pulley feed gear of loading motor with screw driver. After ascertaining the return to the initial set position (*1) install the cassette housing in the specified position. (This method is applied only for the mechanism.)

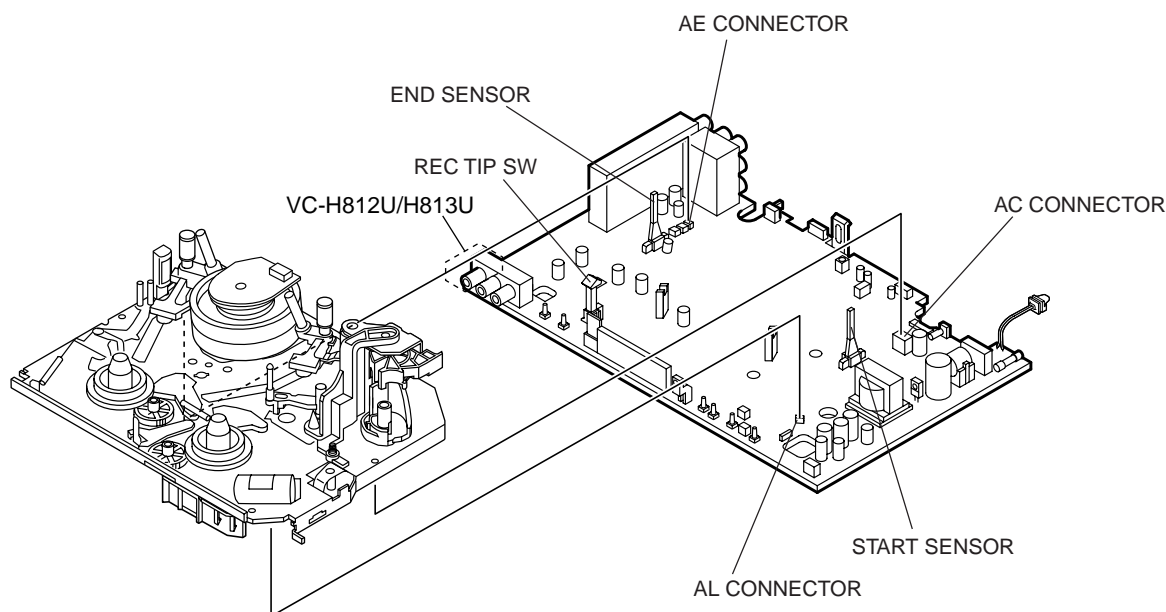


INSTALLING THE MECHANISM ON PWB

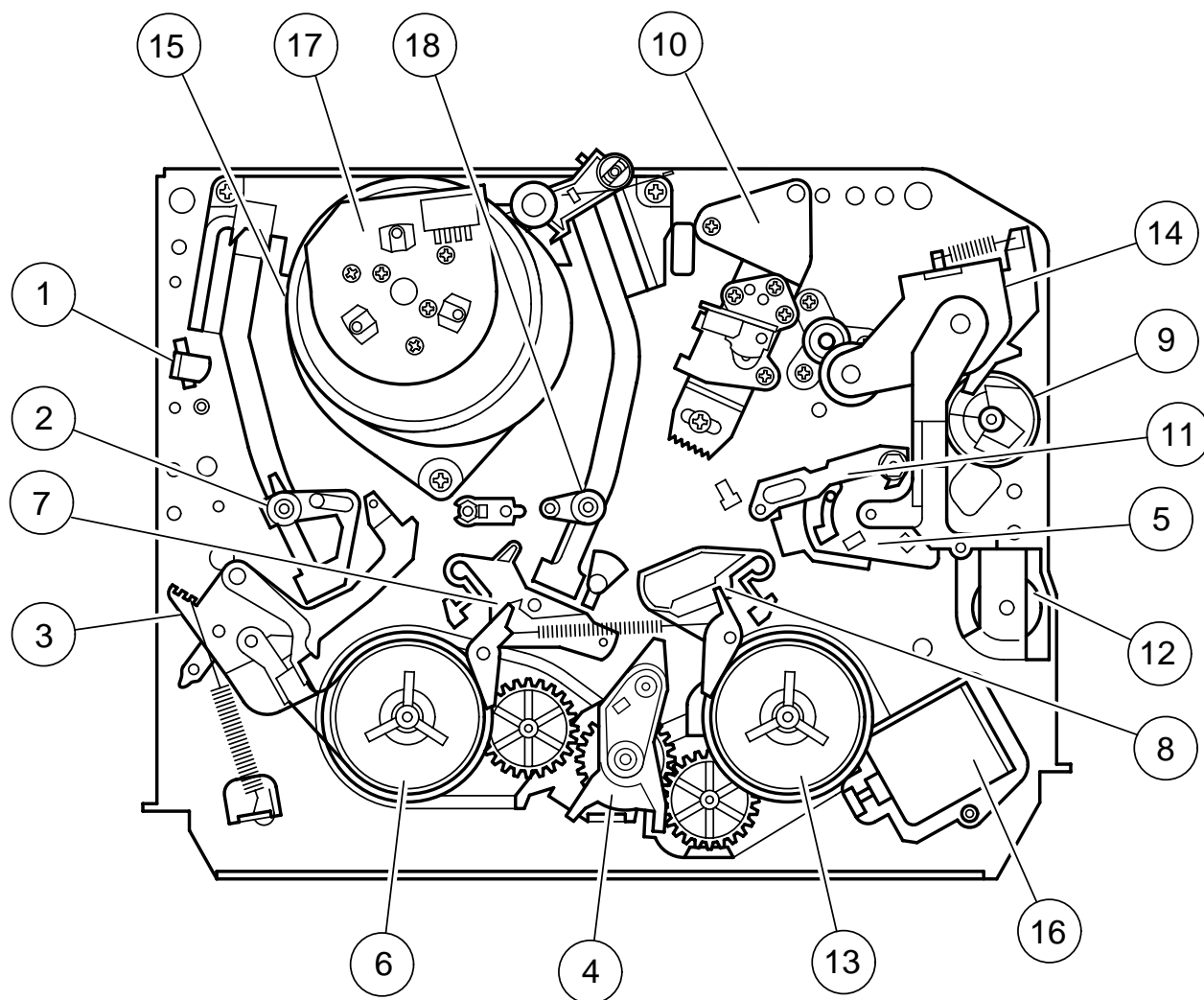
Lower vertically the mechanism, paying attention to the mechanism edge, and install the mechanism with due care so that the parts are not damaged. So as to fix the mechanism to the main PWB install two housings. (Fit the antenna cover to one of them. For other, fix the vicinity of loading motor and solder joint side of main PWB.) Connect again the FFC cable (AA-MH, AD-ME, AH-MH) between the mechanism and the main PWB.

PARTS WHICH NEED PARTICULAR CARE

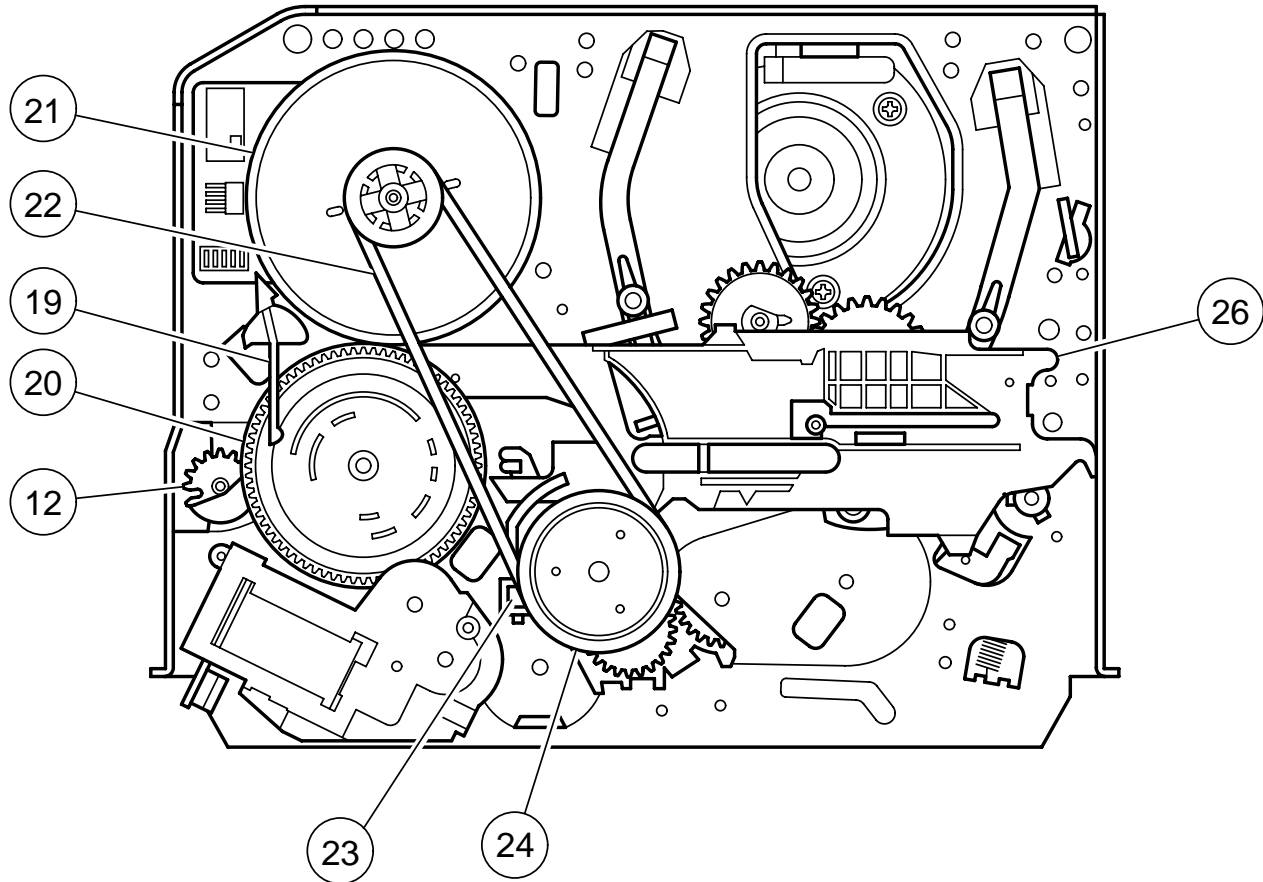
When installing the mechanism chassis on the PWB unit, take care so as to prevent deformation due to contact of mechanism chassis with REC TIP SW.



3. FUNCTION OF MAJOR MECHANICAL PARTS (TOP VIEW)



No.	Function	No.	Function
1	Full erase head	8	Take-up main brake
2	Supply pole base ass'y	9	Pinch drive cam
3	Tension arm	10	A/C head ass'y
4	Idler wheel ass'y	11	Reverse guide lever ass'y
5	Pinch drive lever ass'y	12	Casecon drive gear
6	Supply reel disk	13	Take-up reel disk
7	Supply main brake	14	Pinch roller lever ass'y

FUNCTION OF MAJOR MECHANICAL PARTS (BOTTOM VIEW)







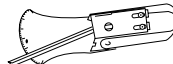

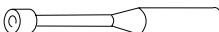




No.	Function	No.	Function
15	Drum ass'y	22	Reel belt
16	Loading motor	23	Clutch lever
17	Drum drive motor	24	Limiter pulley ass'y
18	Take-up pole base ass'y	26	Shifter
19	Slow brake lever		
20	Master cam		
21	Capstan D.D. motor		

4. ADJUSTMENT, REPLACEMENT AND ASSEMBLY OF MECHANICAL UNITS

The explanation given below relates to the on-site general service (field service) but it does not relates to the adjustment and replacement which need high-grade equipment, jigs and skill. For example, the drum assembling, replacement and adjustment service must be performed by the person who have finished the technical courses.

4-1 MECHANISM CONFIRMATION ADJUSTMENT JIG

So as to perform completely the mechanism adjustment prepare the following special jigs. So as to maintain the initial performance of the machine the maintenance and check are necessary. Utmost care must be taken so that the tape is not damaged. If adjustment needs any jig, be sure to use the required jig.

No.	Jig Item	Part No.	Code	Configuration	Remarks			
1.	Torque Cassette Meter	JiGVHT-063	CZ		This cassette torque meter is used for checking and adjusting the torque of take-up for measuring tape back tension.			
2.	Torque Gauge	JiGTG0090	CM		These Jigs are used for checking and adjusting the torque of take-up and supply reel disks.			
		JiGTG1200	CN					
3.	Torque Gauge Head	JiGTH0006	AW					
4.	Torque Driver	JiGTD1200	CB		When fixing any part to the threaded hole using resin with screw, use the jig. (Specified torque 5 kg)			
5.	Master Plane Jig and Reel Disk Height Adjusting Jig	JiGRH0002	BR		These Jigs are used for checking and adjusting the reel disk height.			
		JiGMP0001	BY					
6.	Tension Gauge	JiGSG2000	BS		There are two gauges used for the tension measurements, 300 g and 2.0 kg.			
		JiGSG0300	BF					
7.	Pinch pressing force measuring jig	JiGADP003	BK		This Jig is used with the tension gauge. Rotary transformer clearance adjusting jig.			
8.	Reverse guide height adjustment box driver	JiGDRiVER11055	AR		This Jig is used for height adjustment of the reverse guide (for reverse guide height adjustment).			
9.	Alignment Tape				These tapes are especially used for electrical fine adjustment.			
					Video	Audio	HiFi Audio	Track
		VROATSV	CD		525 Monoscope	7k	—	58μm
					NTSC Color Bar	1k	—	58μm
VROEFZHS	BH		Black Level (only SYNC) signal	2.3k	—	19μm		
10.	Guide roller height adjustment driver	JiGDRiVERH-4	AP		This screwdriver is used for adjusting the guide roller height.			
11.	X value adjustment gear driver	JiGDRIVER-6	BM		For X value adjustment			
12.	Reverse Guide Height Adjusting Jig	JiGRVGH-F18	BU		This Jig is used for height adjustment of the reverse guide.			

4-2 MAINTENANCE CHECK ITEMS AND EXECUTION TIME

Perform the maintenance with the regular intervals as follows so as to maintain the quality of machine.

Parts	Maintained	500 hrs.	1000 hrs.	1500 hrs.	2000 hrs.	Possible symptom encountered	Remarks
Guide roller ass'y		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lateral noises Head occasionally blocked	Abnormal rotation or significant vibration requires replacement.
Sup guide shaft		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Clean tape contact part with the specified cleaning liquid.
Reverse guide		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Slant pole on pole base		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Full erase head		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	Colour and beating	Clean tape contact area with the specified cleaning liquid.
A/C head		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	Small sound or sound distortion	
Upper and lower drum ass'y		<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Poor S/N ratio, no colour Poor flatness of the envelope with alignment tape	
Capstan D.D. motor		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No tape running, uneven colour	
Pinch roller		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No tape running, tape slack	Clean rubber and rubber contact area with the specified cleaning liquid.
Reel belt			<input type="checkbox"/>		<input type="radio"/>	No tape running, tape slack, no fast forward/rewind motion	
Tension band ass'y					<input type="radio"/>	Screen swaying	
Loading motor					<input type="radio"/>	Cassette not loaded or unloaded	
Idler ass'y					<input type="radio"/>	No tape running, tape slack	
Limiter pulley			<input type="checkbox"/>		<input type="radio"/>		
Supply/take-up main brake levers					<input type="radio"/>	Tape slack	
AHC (Automatic Head Cleaner)			<input type="radio"/>		<input type="radio"/>		Replace the roller of the cleaner when it wears down. Just change the AHC roller assembly for new one.

NOTE ☐ : Part replacement. ☐ : Cleaning : Apply grease
<Specified> Cleaning liquid Industrial ethyl alcohol

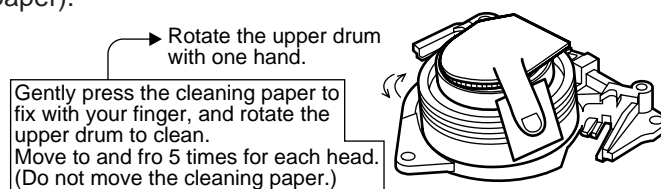
* This mechanism does not need electric adjustment with variable resistor. Check parts. If any deviation is found, clean or replace parts.

Video head cleaning procedure

1. Apply one drop of cleaning liquid to the cleaning paper with the baby oiler.
2. Gently press the cleaning paper against the video head to fix your finger, and move the upper drum so that each head is passed to and fro 5 times (do not move the cleaning paper).
3. Wipe with the dry cleaning paper.

Notes :

- Use the commercially available ethanol of Class 1 as cleaning liquid.
- Since the video head may be damaged, do not move up and down the cleaning paper.
- Whenever the video head is cleaned, replace the cleaning paper.
- Do not apply this procedure for the parts other than the video head.



Parts Code	Description	Code
ZPAPRA56-001E	Cleaning Paper	AW
ZOiLR-02-24TE	Babe Oiler (Spoit)	AH

4-3. REMOVING AND INSTALLING THE CASSETTE HOUSING

• Removal

1. In the cassette removing mode, remove the cassette.
2. Unplug the power cord.
3. Remove in the following numerical order.
 - a) Remove two screws ①.
 - b) Slide and pull up the cassette housing control.

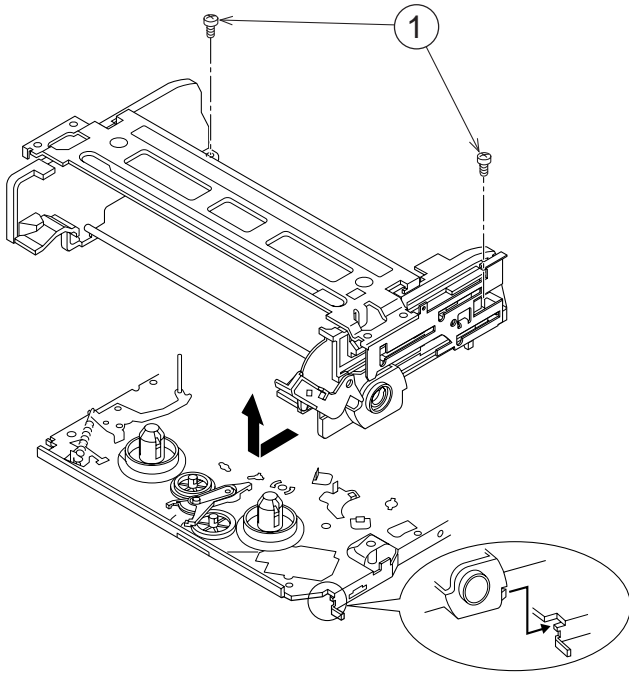


Figure 4-1.

• Reassembly

1. Before installing the cassette housing control, short-circuit TP803 and TP802 provided at operation PWB, press the eject button. The casecon drive gear turns and stops when the positioning mark appears. Engage two teeth of casecon drive gear with the three teeth of casecon drive angle gear, and set on the mechanism chassis as shown below.

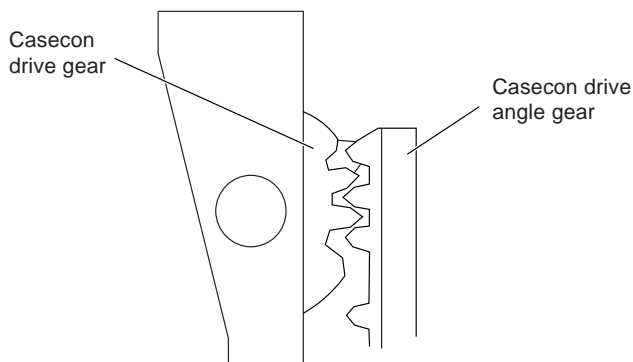


Figure 4-2.

2. Install in the reverse order of removal.

Notes:

1. When fitting the S/E sensor holder to the cassette controller frame L/R, take care.
2. Misengagement of teeth of casecon drive gear and drive angle gear causes malfunction. (The cassette cannot be set, load and ejection are repeated).
3. In the case when you use the magnet screw driver, never approach the magnet driver to the A/C head, FE head, and drum.
4. When installing or removing, take care so that the cassette housing control and tool do not contact the guide pin or drum.
5. After installing the cassette housing control once perform cassette loading operation.

4-4. TO RUN A TAPE WITHOUT THE CASSETTE HOUSING CONTROL ASSEMBLY

1. Remove the full-surface panel.
2. Short-circuit TP803 and TP802.
3. Plug in the power cord.
4. Turn off the power switch.
(The pole bases move into U.L. position.)
5. Open the lid of a cassette tape by hand.
6. Hold the lid with two pieces of vinyl tape.
7. Set the cassette tape in the mechanism chassis.
8. Stabilize the cassette tape with a weight (500g) to prevent floating.
9. Turn on the power switch.
10. Perform running test.

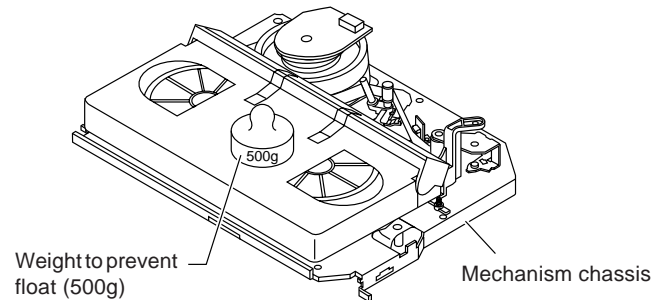


Figure 4-3.

Note:

The weight should not be more than 500g.

To take out the cassette tape.

1. Turn off the power switch.
2. Take out the cassette tape.

4-5. REEL DISK REPLACEMENT AND HEIGHT CHECK

• Removal

1. Remove the cassette housing control assembly.
2. Pull the tension band out of the tension arm ass'y.
3. Remove the Supply/Take-up main brake ass'y.
4. Open the hook at the top of the reel disk, and remove the reel disk.

Note:

Take care so that the tension band ass'y and main brake ass'y (especially soft brake) are not deformed.

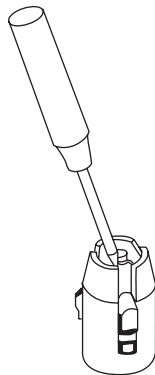
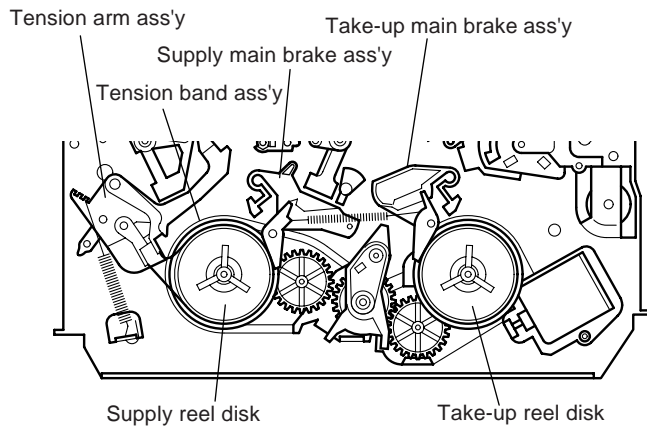


Figure 4-4.

Note:

When the tension band ass'y is pressed in the direction of the arrow for removal, the catch is hard to be deformed.

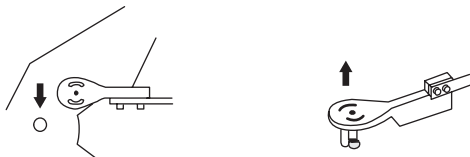


Figure 4-5.

• Reassembly (Supply reel disk)

1. Clean the reel disk shaft and apply grease (SC-141) to it.
2. Match the phases of reel disk and reel relay gear, and set the new reel disk.
3. After checking the reel disk height, wind the tension band ass'y around the reel disk, and insert into the hole of tension arm ass'y.

4. Assemble the Supply main brake ass'y.

Notes:

1. When installing the reel disk, take due care so that the tension band ass'y is not deformed and grease does not adhere.
2. Do not damage the Supply main brake ass'y. Be careful so that grease does not adhere to the brake surface.

• Reassembly (Take-up reel disk)

1. Clean the reel disk shaft and apply grease (SC-141) to it.
2. Align the phase of the reel disk to that of the reel relay gear and to install a new take-up reel disk onto the shaft.
3. Check the reel disk height and reassemble the take-up main brake ass'y.

Note:

1. Take care so that the Take-up main brake ass'y is not damaged. Take care so that grease does not adhere the brake surface.
2. After reassembly, check the video search rewind back tension (see 4-10), and check the brake torque (see 4-14).

• Height checking and adjustment

Note:

1. Set the master plane with due care so that it does not contact the drum.
2. When putting the master plane, shift the reverse guide a little in the loading direction. Care must be taken since excessive shift results in damage.

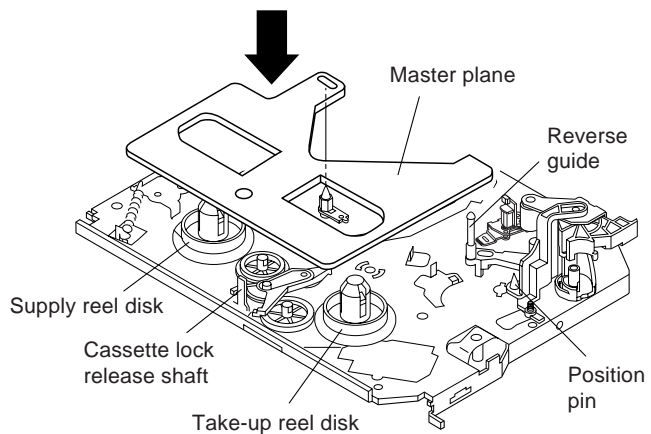


Figure 4-6.

Note:

- Check that the reel disk is lower than part A but higher than part B. If the height is not correct, readjust the reel disk height by changing the poly-slider washer under the reel disk.

Note:

Whenever replacing the reel disk, perform the height checking and adjustment.

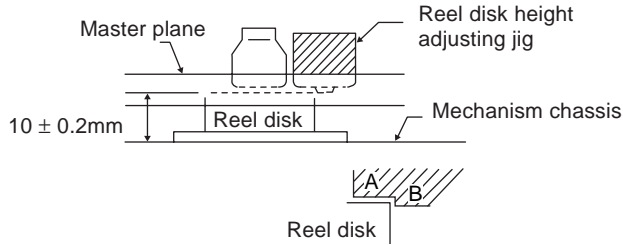


Figure 4-7.

4-6. CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN FAST FORWARD MODE

- **Remove the cassette housing control assembly.**
- **After short-circuiting TP803 and TP802 provided at operation PWB, plug in the power cord.**
- **Setting**
 1. Set a torque gauge to zero on the scale. Place it on the take-up reel disk.
 2. Press the FF button.
 3. To calculate the remaining capacity of the play back mode, slowly rotate the supply reel disk, and then shift it into the forward mode.
- **Checking**
 1. Turn the torque gauge slowly (one rotation every 2 to 3 seconds) by hand in the CW direction.
 2. Make sure that the indication of torque gauge is not less than 30mN·m (306gf·cm).

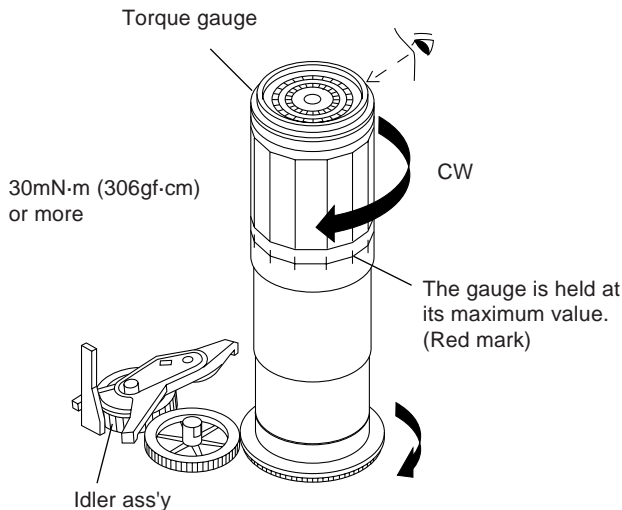


Figure 4-8.

- **Adjustment**
 1. If the FF winding-up torque is less than the specified value, clean the capstan D.D. motor pulley, drive belt, and limiter pulley with cleaning liquid, and check again.
 2. If the torque is less than the set value, replace the reel belt.

Notes:

1. Hold the torque gauge by hand so that it is not moved.
2. Do not keep the reel disk in lock state. Do not allow long-time measurement.

4-7. CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN REWIND MODE

- **Remove the cassette housing control assembly.**
- **After short-circuiting TP803 and TP802 provided at operation PWB, plug in the power cord.**
- **Setting**
 1. Set a torque gauge to zero on the scale. Place it on the supply reel disk.
 2. Press the rewind button.
 3. To calculate the remaining capacity, slowly rotate the take-up reel disk, and then shift it into the rewind mode.
- **Checking**
 1. Turn the torque gauge slowly (one rotation every 2 to 3 seconds) by hand in the CCW direction.
 2. Make sure that the indication of torque gauge is not less than 30mN·m (306gf·cm).

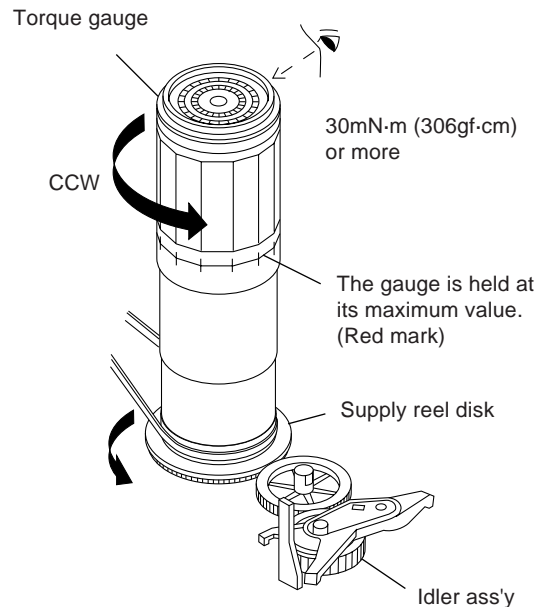


Figure 4-9.

- **Adjustment**
 1. If the rewind winding-up torque is less than the specified value, clean the capstan D.D. motor pulley, drive belt, and limiter pulley with cleaning liquid, rewind again, and check the winding-up torque.
 2. If the winding-up torque is still out of range, replace the drive belt.

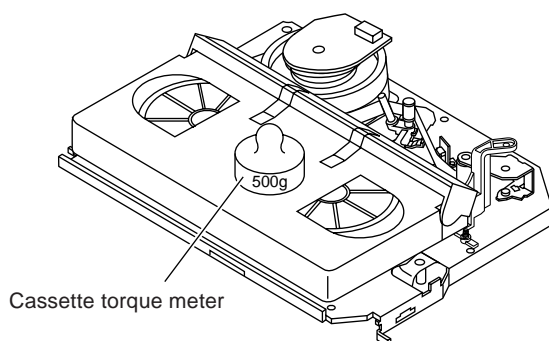
Notes:

1. Hold the torque gauge by hand so that it is not moved.
2. Do not keep the reel disk in lock state. Do not allow long-time measurement.

4-8. CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN RECORD/PLAYBACK MODE

- Remove the cassette housing control assembly.
- After short-circuiting TP803 and TP802 provided at operation PWB, plug in the power cord.
- Turn off the power switch.
- Open the cassette torque meter lid, and fix it with tape.
- Load the cassette torque meter into the unit.
- Put the weight (500g) on the cassette torque meter.
- Turn on the power switch.
- Press the picture record button, and set EP picture record mode (x3).

Set value EP6.9 ± 2.5mN·m (70 ± 25gf·cm)

**Figure 4-10.**

- **Checking**

1. Make sure that value is within the setting $6.9 \pm 2.5\text{mN}\cdot\text{m}$ ($70 \pm 25\text{gf}\cdot\text{cm}$).
2. The winding-up torque fluctuates due to variation of rotation torque of limiter pulley ass'y. Read the center value of fluctuation as setting.
3. Set the EP record mode (x3) and make sure that the winding-up torque is within setting.

- **Adjustment**

If the playback winding-up torque is not within the setting, replace the limiter pulley assembly.

Note:

When the torque cassette is set, put a weight (500g) to prevent rise.

When the cassette torque meter is taken out.

Turn off the power switch.

4-9. CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN VIDEO SEARCH REWIND MODE

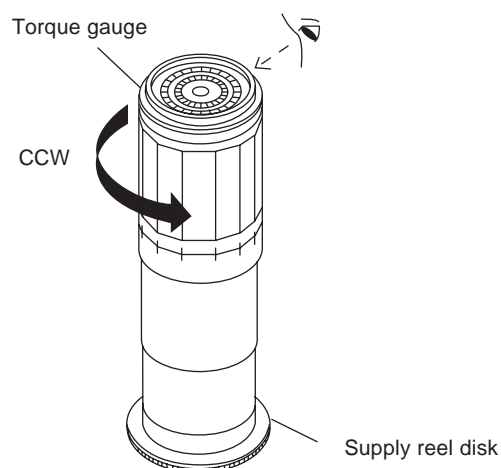
- Remove the cassette housing control assembly.
- After short-circuiting TP803 and TP802 provided at operation PWB, plug in the power cord.

- **Setting**

Press the playback button and rewind button to set the video search rewinding mode.

- **Checking**

Place the torque gauge on the supply reel disk, and turn it counterclockwise very slowly (one rotation every 1 to 2 seconds) and check that the torque is within the set value $14.0 \pm 3.9\text{mN}\cdot\text{m}$ ($144 \pm 40\text{gf}\cdot\text{cm}$)

**Figure 4-11.****Note:**

Surely put the torque gauge on the reel disk to measure. If the torque gauge is raised, accurate measurement is impossible.

- **Adjustment**

If the rewinding playback winding-up torque is not within the setting, replace the limiter pulley assembly.

Note:

The winding-up torque fluctuates due to variation of rotation torque of supply reel disk. Read the center value of fluctuation as setting.

4-10. CHECKING THE VIDEO SEARCH REWIND BACK TENSION

- Remove the cassette housing control assembly.
- After short-circuiting TP803 and TP802 provided at operation PWB, plug in the power cord.
- **Checking**
 1. After pressing the play button, press the rewind button, and set the video search rewind mode.
 2. Place the torque gauge on the take-up reel disk, and turn it counterclockwise very slowly (one rotation every 2 to 3 seconds) and check that the torque is within the set value $3.4 \pm 1.5\text{mN}\cdot\text{m}$ ($35 \pm 15\text{gf}\cdot\text{cm}$).

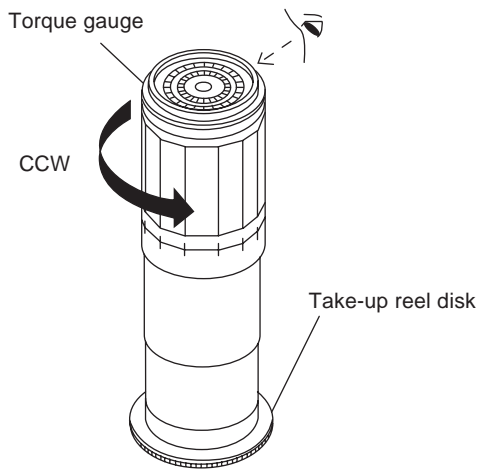


Figure 4-12.

Notes:

Set the torque gauge securely on the take-up reel disk. If it is not secure, the measurement will be incorrect.

4-11. CHECKING THE PINCH ROLLER PRESSURE

- Remove the cassette housing control assembly.
- After short-circuiting TP803 and TP802 provided at operation PWB, plug in the power cord.

- **Checking**

Press the play button to set the playback mode.

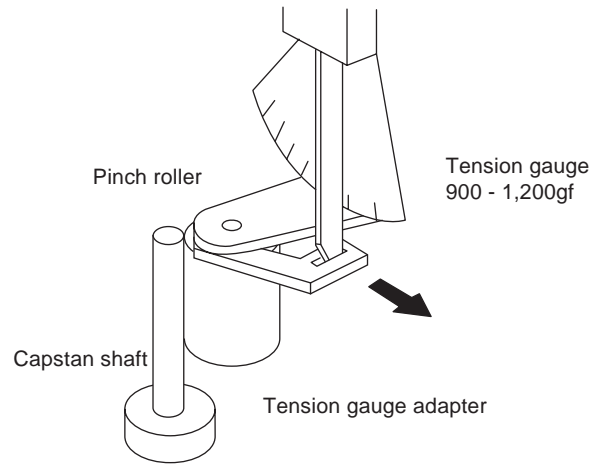


Figure 4-13.

1. Detach the pinch roller from the capstan shaft. Do not separate excessively. Or the pinch lever and pinch double action lever may disengage.
2. Engage the tension gauge adapter with the pinch roller shaft, and pull in the arrow direction.
3. Gradually return the pinch roller, and measure the pulling force when the pinch roller contacts the capstan shaft.
4. Make sure that the measured value is within setting 9.0 N to 11.8 N (900 to 1,200gf).

4-12. CHECKING AND ADJUSTMENT OF TENSION POLE POSITION

- Remove the cassette housing control assembly.
- After short-circuiting TP803 and TP802 provided at operation PWB, plug in the power cord.
- **Setting**
 1. Turn off the power switch.
 2. Open the cassette tape (T-120), and fix with tape.
 3. Set the cassette tape in loading state.
 4. Put the weight (500g) on the cassette tape.
 5. Turn on the power switch.
 6. Make the adjustment with the beginning of a T-120 tape.

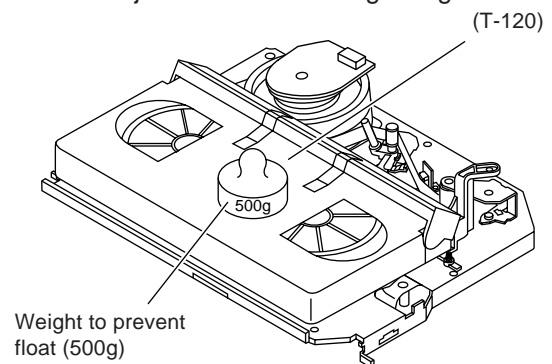
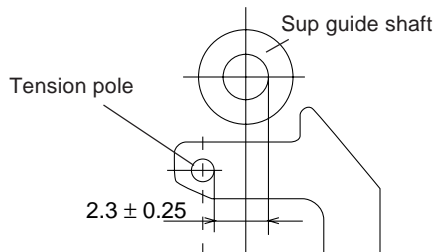


Figure 4-14.

- **Checking**

1. Set a cassette tape, push the REC button to place the unit in the SP record mode. Now check the tension pole position.

2. Visually check to see if the right edge of the tension pole is within the 2.3 ± 0.25 from the right edge of the Sup guide shaft.



Make the adjustment with the beginning of a T-120 tape.

Figure 4-15.

At left side from the center line

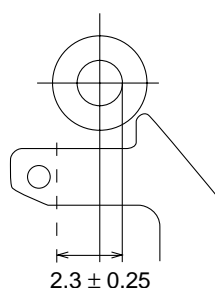


Figure 4-16.

Insert the slotted screwdriver in the tension pole adjuster, and rotate counterclockwise.

At right side from the center line

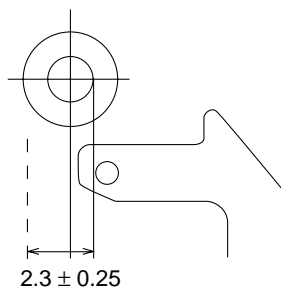


Figure 4-17.

Insert the slotted screwdriver in the tension pole adjuster, and rotate clockwise.

Tension pole adjuster adjusting range

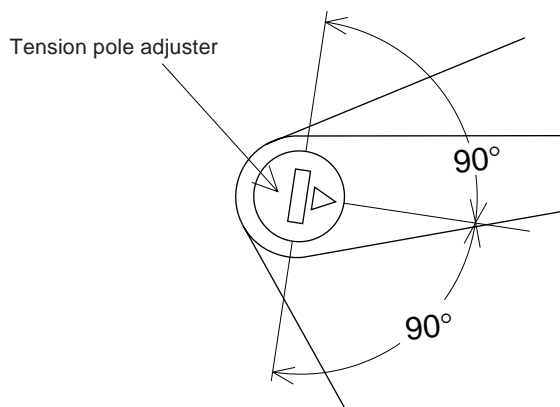


Figure 4-18.

Adjust so that the delta mark of tension pole adjuster is within 90° range (left, right).

4-13. CHECKING AND ADJUSTMENT OF RECORD/PLAYBACK BACK TENSION

- Remove the cassette housing control assembly.
- After short-circuiting TP803 and TP802 provided at operation PWB, plug in the power cord.
- **Setting**
 1. Turn off the power switch.
 2. Open the torque cassette meter and fix with tape.
 3. Set the cassette tape in loading state.
 4. Put the weight (500g) on the cassette torque meter.
 5. Turn on the power switch.

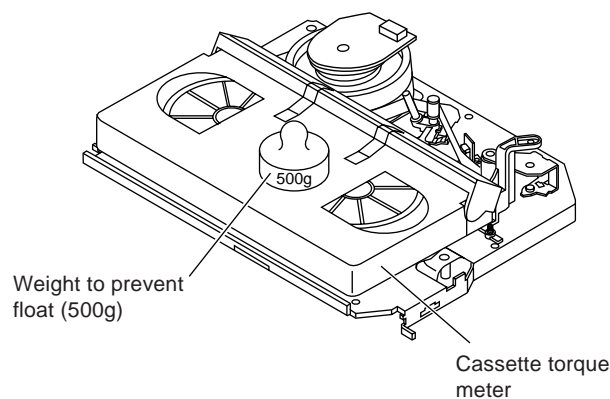


Figure 4-19.

- **Checking**
 1. Push the REC button to place the unit in the SP record mode.
 2. At this time ascertain that the back tension is within the setting (36.5 to 52g-cm) by seeing the indication of torque cassette meter.

- **Adjustment**

1. If the indication of torque cassette meter is lower than the setting, shift the tension spring engagement to the part A.
2. If the indication of torque cassette meter is higher than the setting, shift the tension spring engagement to the part B.

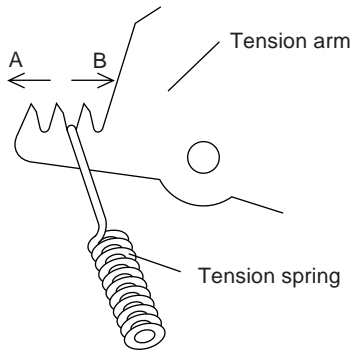
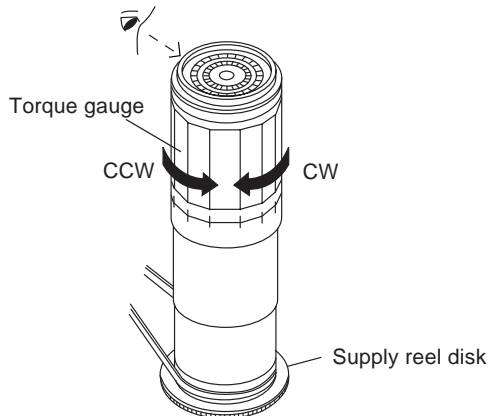


Figure 4-20.

4-14. CHECKING THE BRAKE TORQUE

- **Checking the brake torque at the supply side**



CCW:	2.9~9.8mN·m (30~100gf·cm)
CW:	4.9~13.7mN·m (50~140gf·cm)

Figure 4-21.

- **Remove the cassette housing control assembly.**
- **After short-circuiting TP803 and TP802 provided at operation PWB, plug in the power cord.**

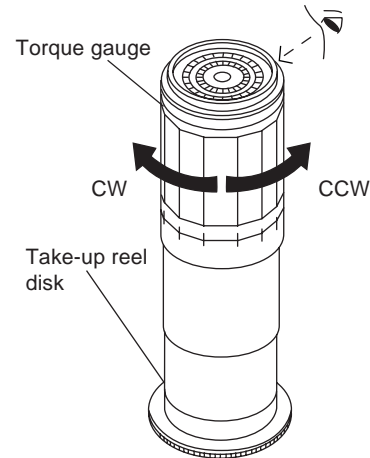
- **Setting**

1. Set a torque gauge to zero on the scale. Place it on the supply reel disk.
2. Switch from the FF mode to the STOP mode.
3. Disconnect the power cord.

- **Checking**

Turn the torque gauge at a rate of about one turn/2 sec in the CW direction/CCW direction with respect to the supply reel disk so that the reel disk and torque gauge pointer rotate at equal speed, and make sure that the value is within the setting (CW direction: 4.9 to 13.7mN·m (50 to 140gf·cm); CCW direction: 2.9 to 9.8mN·m (30 to 100gf·cm)).

- **Checking the brake torque at the take-up side**



CCW:	4.9~13.7mN·m (50~140gf·cm)
CW:	3.9~10.8mN·m (40~110gf·cm)

Figure 4-22.

- **Remove the cassette housing control assembly.**

- **After short-circuiting TP803 and TP802 provided at operation PWB, plug in the power cord.**

- **Setting**

1. Switch from the FF mode to the STOP mode.
2. Disconnect the power cord.
3. Set a torque gauge to zero on the scale. Place it on the take-up reel disk.

- **Checking**

1. Turn the torque gauge at a rate of about one turn/2 sec in the CCW direction/CW direction so that the reel disk and torque gauge pointer rotates at equal speed and make sure that the value is within the setting (CCW direction: 4.9 to 13.7mN·m (50 to 140gf·cm), CW direction: 3.9 to 10.8 mN·m (40 to 110gf·cm)).
 2. Adjustment of the brake torque at the supply side and the take-up side
- Unless the supply side brake torque or take-up side brake torque is within the setting, clean the felt surface of reel disk (supply, take-up) brake lever, check again the brake torque.
 - If value cannot be set within the setting yet, replace the main brake ass'y or main brake spring.

4-15. REPLACEMENT OF A/C (Audio/Control) HEAD

1. Remove the cassette housing control assembly.
2. In unloading state unplug the power cord.

• Removal

1. Remove the screws ① ② ③, Azimuth screw, Tilt screw.
2. Unsolder the PWB fitted to the A/C head.

Notes:

1. When replacing, never touch the head. If you touched, clean with the cleaning liquid.
2. When removing the screw ③, take care so that the spring may out.

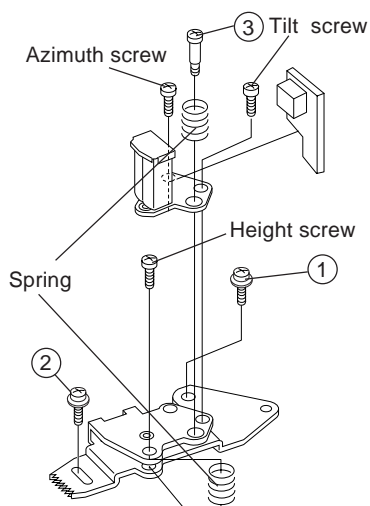


Figure 4-23.

• Replacement

1. Solder the removed PWB to the new head assembly.
2. Adjust the height from the A/C head arm (lower surface) to the A/C head plate to 10.8mm with slide calipers. (3 places of azimuth screw section, tilt screw section and A/C head front section) (See the figure below.)

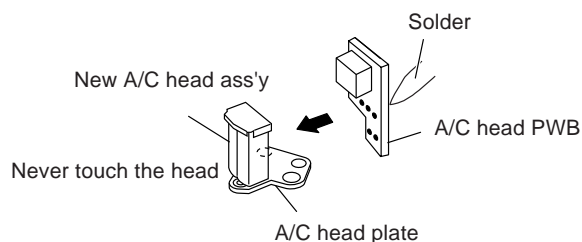


Figure 4-24.

3. Align the left end of gear of A/C head arm with the punched mark of chassis, tentatively tighten the screws ① and ② so as to ensure smooth motion of A/C head arm. Tentative tightening torque must be 0.15 to 0.20 N·m (1.5 to 2.0kgf·cm).

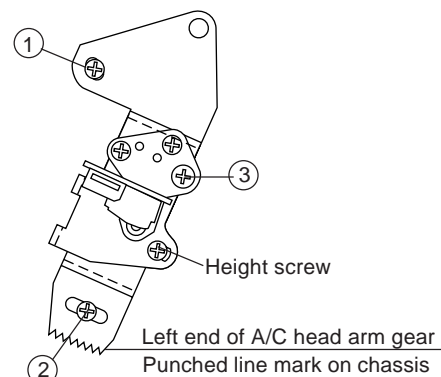


Figure 4-25.

Note:

1. If the screws ① and ② are tightened too loose, the azimuth and height of A/C head may change when they are finally tightened. Therefore care must be taken.
2. After completion of A/C head be sure to adjust tape running. (Execute the running adjustment by the method described in 4-18.)

4-16. A/C HEAD HEIGHT ROUGH ADJUSTMENT

• Setting

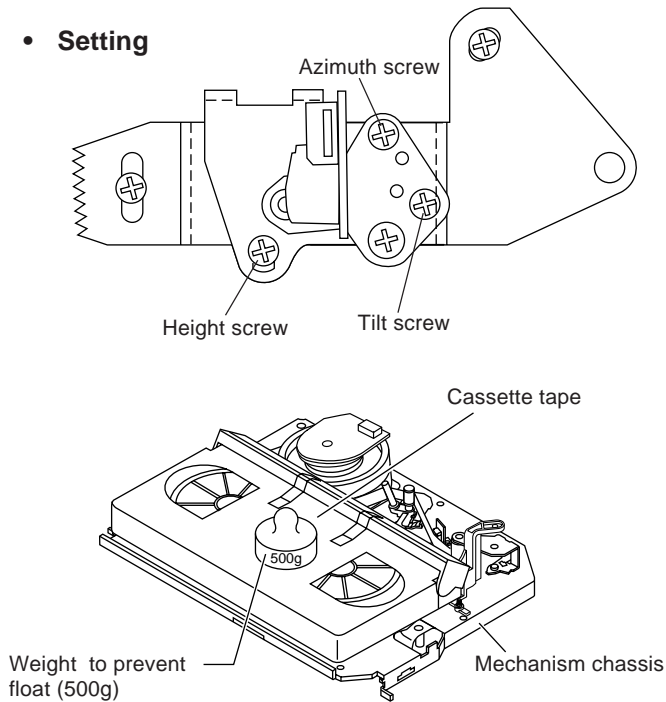


Figure 4-26.

1. Set the cassette tape in the unit.
2. Press the PLAY button to put the unit in the playback mode.
3. Roughly adjust the height of the A/C head by turning the height screw until the tape is in the position shown below.

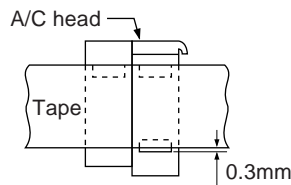


Figure 4-27.

• Adjustment

Adjust the height screw visually so that the control head is visible 0.3mm below the bottom of the tape.

4-17. HEIGHT ADJUSTMENT OF REVERSE GUIDE

1. Adjust the height from the mechanism chassis to the reverse guide lower flange to 13.38 mm, using the reverse guide height adjustment jig, in tape loading state. (Refer to Figure 4-28 (a) (b).)

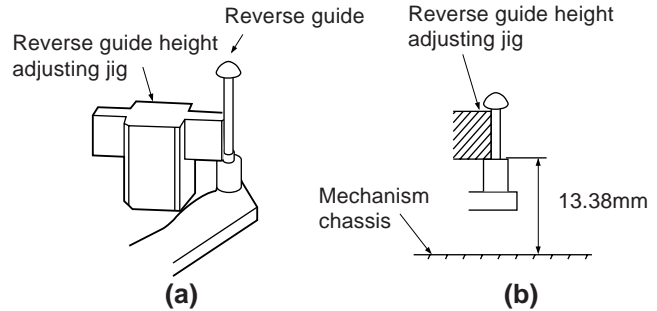


Figure 4-28.

2. Rotate counterclockwise the reverse guide height adjustment nut 1/10 turn. (For height adjustment use the reverse guide height adjustment box driver (JiGDRIVER 11055)).

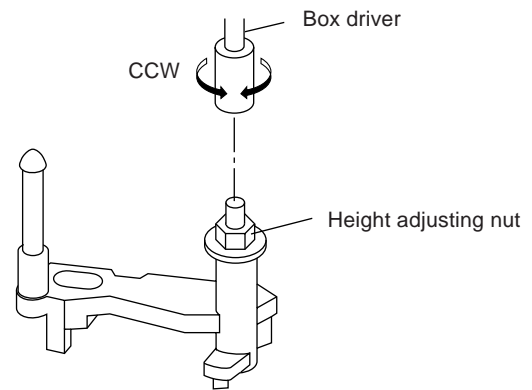
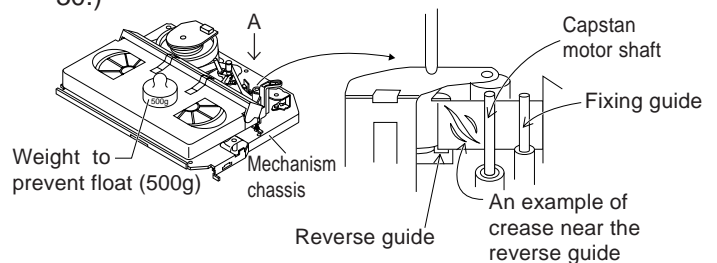


Figure 4-29.

3. Set the tape, and check for tape crease near the reverse guide in the playback mode. If crease is found, turn the reverse guide adjustment nut to remove crease. (As for crease check refer to Figure 4-30.)

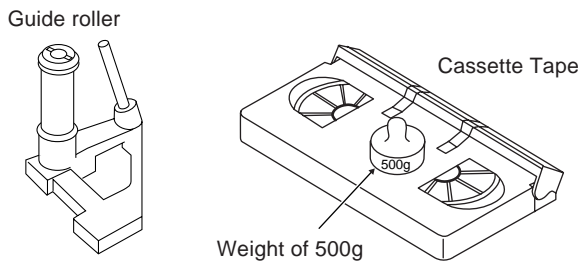


* Check for crease from the A direction.

Figure 4-30.

4-18. ADJUSTMENT OF TAPE DRIVE TRAIN**1. Tape run rough adjustment**

- ① Remove the cassette housing control assembly.
- ② After shortcircuiting TP803 and TP802 provided at operation PWB, plug in the power cord.
- ③ Check and adjust the position of the tension pole. (See 4-12.)
- ④ Check and adjust the video search rewind back tension. (See 4-10.)
- ⑤ Connect the oscilloscope to the test point for PB CHROMA envelope output (TP201). Set the synchronism of the oscilloscope to EXT. The PB CHROMA signal is to be triggered by the head switching pulse (TP202).
- ⑥ Set the alignment tape (VROATSV) to play. (Put a 500g weight on the cassette tape to prevent lift of cassette tape.)

**Figure 4-31.**

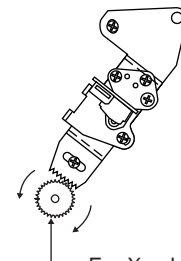
- ⑦ Press the tracking button (+), (-) and change the envelope waveform from max to min and from min to max. At this time make sure that the envelope waveform changes nearly parallel.
- ⑧ Unless the envelope waveform changes nearly parallel, adjust the height of supply side and take-up side guide roller so that the envelope waveform changes nearly parallel. (For envelop adjustment procedure refer to Figure 4-35.)
- ⑨ Turn the tilt screw to remove the tape crease at the fixing guide flange.
Playback the tape and check for tape crease at the fixing guide flange.
 - (1) If there is no tape crease
Turn the tilt screw clockwise so that tape crease appears once at the flange, and then return the tilt screw so that the crease disappears.
 - (2) If there is tape crease
Turn counterclockwise the tilt screw so that the tape crease disappears.
(Reference) If the tilt screw is turned clockwise crease appears at the lower flange.

Notes:

1. Previously set the tracking control in the center position, and adjust the envelop waveform to maximum with X value adjustment nut. Thereby the tape run rough adjustment is facilitated.
2. Especially the outlet side envelope waveform must have higher flatness.

**Figure 4-32.****2. Adjustment of A/C head height and azimuth**

- ① Perform the initial setting of A/C head position by the method stated in "4-15 Replacement 3".
- ② Connect the oscilloscope to the audio output terminal.
- ③ Using the alignment tape in which 1 kHz linear audio signal has been recorded, adjust the height screw so as to get max audio output.
- ④ Using the alignment tape in which 7 kHz linear audio signal has been recorded, adjust the azimuth screw so as to get max audio output.
- ⑤ The adjustment of ③ and ④ twice or three times repeat, and finally adjust ④.

**Figure 4-33.****3. Tape run adjustment**

- ① Connect the oscilloscope to PB CHROMA envelope output test point, set oscilloscope sync to EXT, trigger-input the PB CHROMA signal (head switching pulse).
- ② Rough adjustment of X value
Tentatively fix A/C head arm screws ① and ② by the method described in 4-15 "Replacement 3".
Playback the alignment tape (VROATSV) and shortcircuit TP801 and TP802. As a result the auto-tracking is automatically cancelled, so that the X value adjustment mode is set.
Move the A/C head with the X value adjustment gear driver (JiGDRiVER-6) by the method shown in Figure 4-33, and adjust the A/C head so as to get the maximum envelope waveform. (Note: When the A/C head is adjusted, adjust so that the maximum envelop waveform is obtained nearest the position of initial setting made in 4-15.)

- ③ Next, Press the tracking button (+), (–) and change the envelope waveform from max to min and from min to max. At this time adjust the height of supply and take-up side guide roller with the adjustment driver (JiGDRIVERH-4) so that the envelope waveform changes nearly parallel.
- ④ If the tape is lifted or sunk from the helical lead surface, the PB CHROMA envelope waveform appears as shown in Figure 4-35.
- ⑤ Press the tracking button (+), (–) and make sure that the envelope waveform changes nearly parallel.
- ⑥ Finally check tape crease near the reverse guide. If tape crease is found, remove it as stated in 4-17 "HEIGHT ADJUSTMENT OF REVERSE GUIDE" item 3.

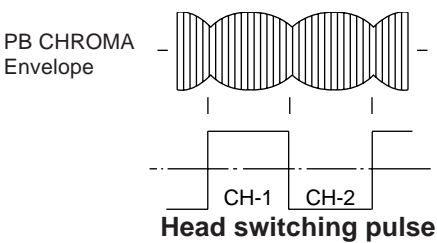


Figure 4-34.

4. A/C head X value adjustment
- ① Tentatively fix A/C head arm screws ① and ② by the method described in 4-15 "Replacement 3".
 - ② Playback the alignment tape (VROATSV), and shortcircuit TP801 and TP802. As a result the auto-tracking is automatically cancelled, so that the X value adjustment mode is set.

	When the tape is above the helical lead.		When the tape is below the helical lead.	
	Supply side	Take-up side	Supply side	Take-up side
Adjustment	Supply side guide roller rotated in clockwise direction (lowers guide roller) to flatten envelope.	Take-up side guide roller rotated in clockwise direction (lowers guide roller) to flatten envelope.	Supply side guide roller rotated in counterclockwise direction (raises guide roller) to make the tape float above the helical lead. The supply side guide roller is then rotated in the clockwise direction to flatten the envelope.	Take-up side guide roller rotated in counterclockwise direction (raises guide roller) to make the tape float above the helical lead. The take-up side guide roller is then rotated in the clockwise direction to flatten the envelope.

Figure 4-35.

- ③ Move the A/C head with the X value adjustment gear driver by the method shown in Figure 4-33, and adjust the A/C head so as to get the maximum envelope waveform. (Note: At this time adjust so as to get the maximum envelope waveform nearest the A/C head position which has been set in case of X value rough adjustment as stated in 4-18, 3- ②.)
- ④ Tighten finally the screws ① and ②. Be sure to tighten at first the screw ① and then the screw ②. Final tightening torque is 0.6N·m (If the screw ② is tightened first, the X value may deviate.)
- ⑤ Adjust the playback switching point (Refer to the electric adjustment method.)
- ⑥ Playback the self-picture-recorded tape, and check the flatness of envelope waveform and sound.

Notes:
When the A/C head X value adjustment is performed, be sure to perform at first X value rough adjustment (refer to 4-18, 3-②).

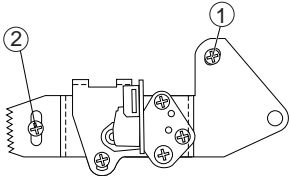


Figure 4-36.

4-19. REPLACEMENT OF THE CAPSTAN D.D. (DIRECT DRIVE) MOTOR

- Remove the mechanism from the main PWB (refer to 2-2 "item 1 When removing the mechanism from the main PWB").

- Removal (Follow the order of indicated numbers.)**

- Remove the reel belt ①.
- Remove the three screws ②.

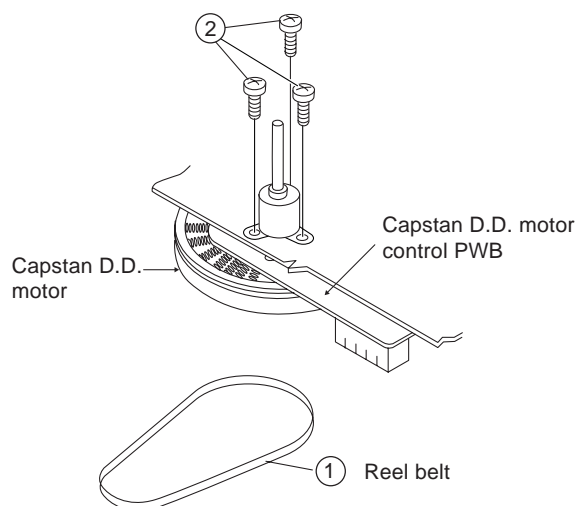


Figure 4-37.

- Reassembly**

- Taking care so that the capstan shaft does not contact the mechanism chassis, set its position on the mechanism chassis, and then install with the three screws.
- Install the reel belt.

- Notes:**

- After installing the capstan D.D. motor, be sure to rotate the capstan D.D. motor and check the movement.
- Set the tape, and check for the tape crease near the reverse guide in the playback mode. Adjust the A/C head and azimuth as stated in 4-18 item 2. If crease is found, adjust as stated in 4-17 "HEIGHT ADJUSTMENT OF REVERSE GUIDE".

4-20. REPLACEMENT OF DRUM D.D. MOTOR

- Set the ejection mode.
- Withdraw the main power plug from the socket.

- Removal (Perform in numerical order.)**

- Disconnect the FFC cable ①.
- Unscrew the D.D. stator assembly fixing screws ②.
- Take out the D.D. stator assembly ③.
- Unscrew the D.D. rotor assembly fixing screws ④.
- Take out the D.D. rotor assembly ⑤.

- Notes:**

- In removing the D.D. stator assembly, part of the drum earth spring pops out of the pre-load collar. Be careful not to lose it.
- Install, so that the D.D. rotor ass'y and upper drum ass'y mounting direction check holes align. (Align the upper drum dent with the rotor hole.)
- Be careful not to damage the upper drum or the video head.
- Protect the hole elements from shock due to contact with D.D. stator or D.D. rotor ass'y.
- After installation adjust the playback switching point for adjustment of servo circuit.

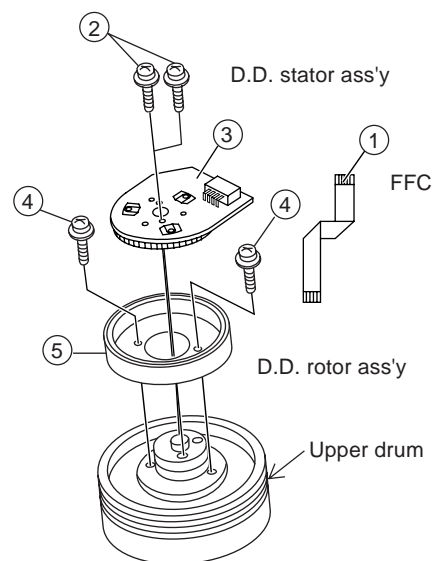


Figure 4-38.

4-21. REPLACING THE UPPER AND LOWER DRUM ASSEMBLY

- Replacement (Perform in the numerical order)
- ① Remove the motor as stated in 4-20 D.D. motor replacement.
- ② Remove the drum earth brush ass'y ②.
- ③ Remove the drum base ③ from the upper and lower drum assembly ①.

[Cares when replacing the drum]

1. Be careful so that the drum earth brush is not lost.
2. Do not touch directly the drum surface.
3. Fit gently the screwdriver to the screws.
4. Since the drum assembly is an extremely precise assembly, it must be handled with utmost care.
5. Make sure that the drum surface is free from dust, dirt and foreign substances.
6. After replacing the drum be sure to perform the tape running adjustment.
 - Playback switching point adjustment
 - X-position adjustment and check
 - Standard and x-3 slow tracking adjustment
7. After replacing the drum clean the drum.

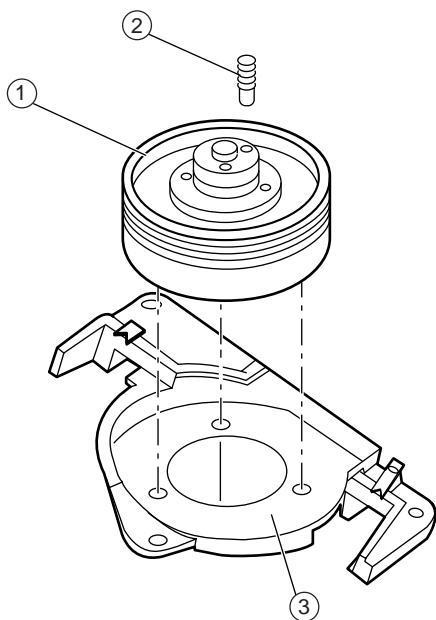


Figure 4-39.

4-22. ASSEMBLING OF PHASE MATCHING MECHANISM COMPONENTS

- Assemble the phase matching mechanism components in the following order.

1. Assemble the pinch roller assembly and pinch drive cam.
2. Mounting the shifter (on the back of the mechanism chassis).
3. Mounting the master cam (on the back of the mechanism chassis).
4. Assemble the connection gear, slow brake and loading motor parts.

- Pinch drive cam and pinch roller assembling method.

(Place the following parts in position in numerical order.)

- (1) Reverse drive lever ①
- (2) Reverse guide spring ②
- (3) Reverse guide lever ass'y ③
- (4) Reverse guide height adjusting nut ④
- (5) Pinch drive cam ⑤
- (6) Pinch roller ass'y ⑥
- (7) Open lever ⑦

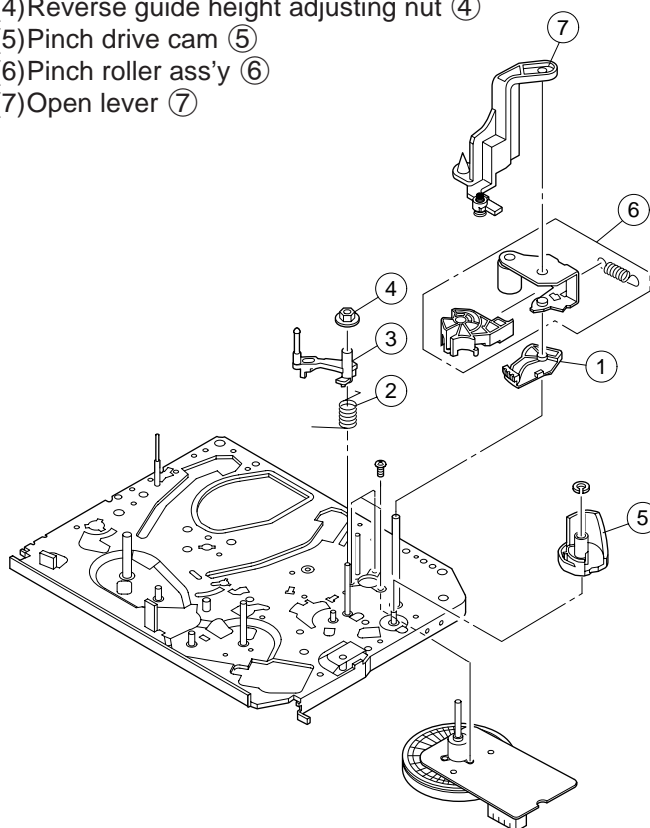
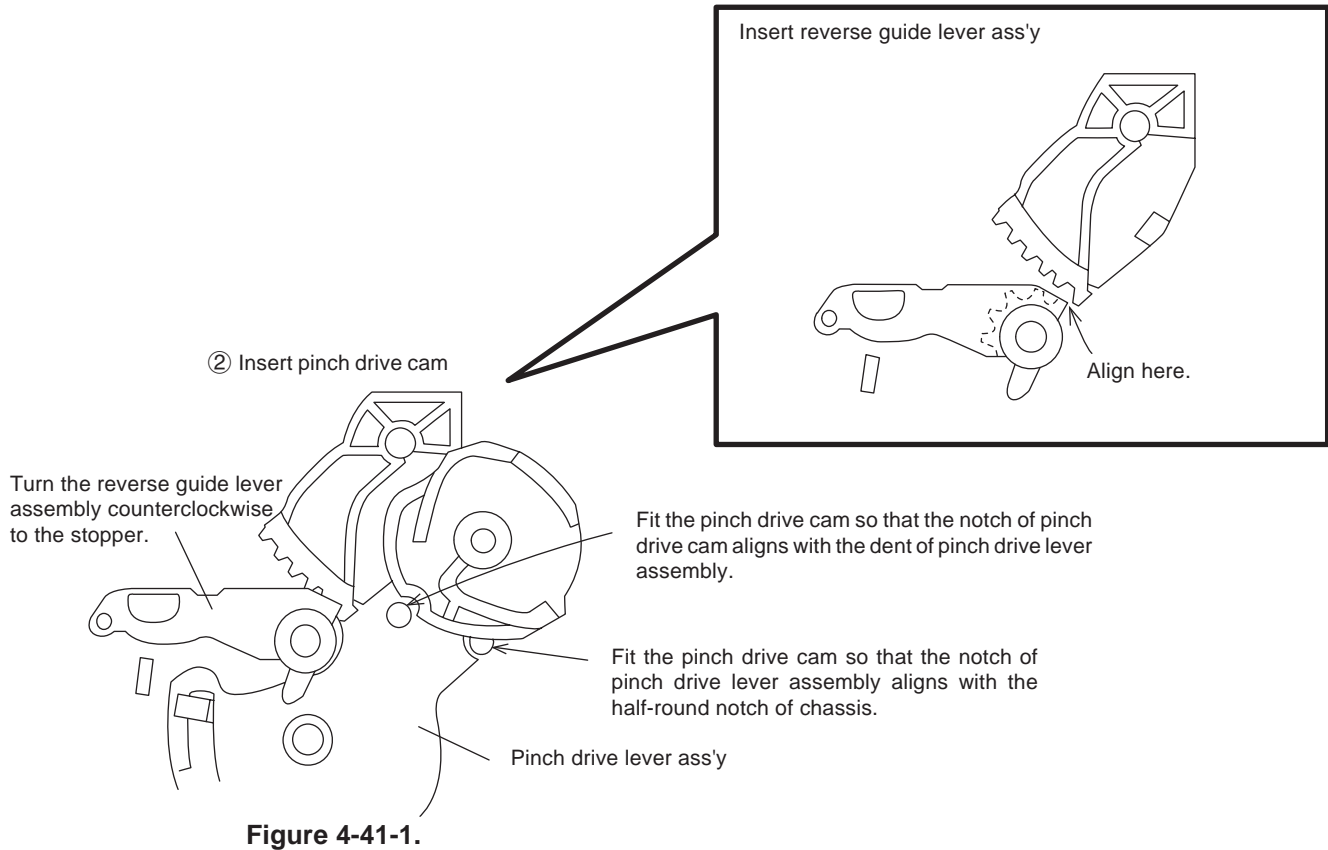


Figure 4-40.

① Insert Reverse Guide Lever Ass'y



② Insert Pinch Roller/Pinch Double Action Lever Ass'y.

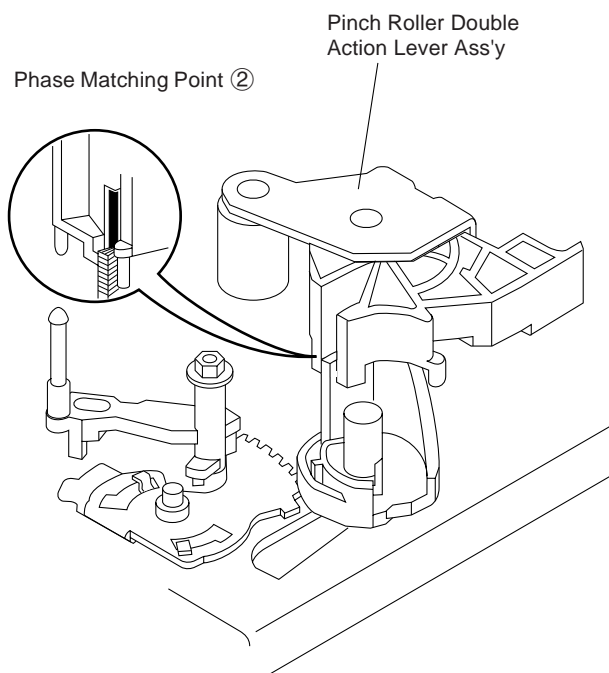


Figure 4-41-2.

③ Insert Open Lever.

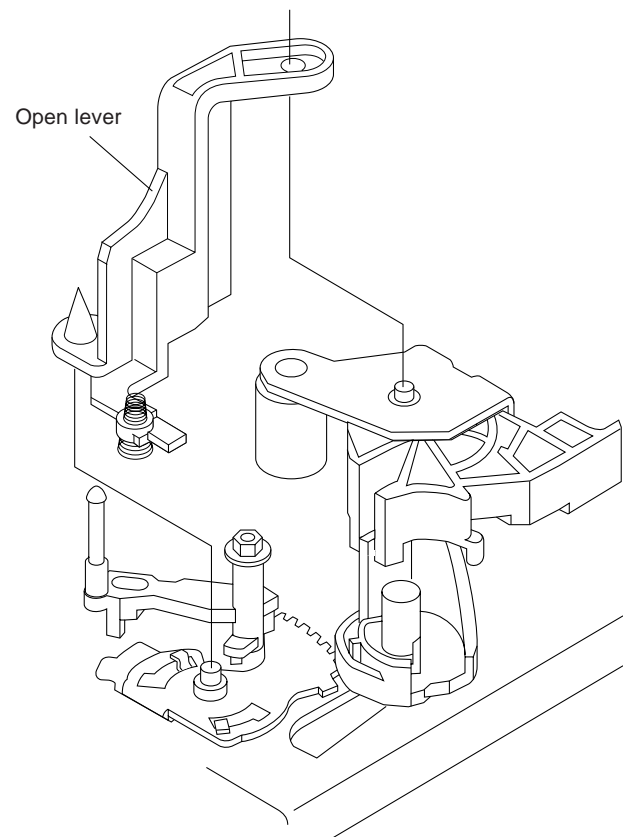
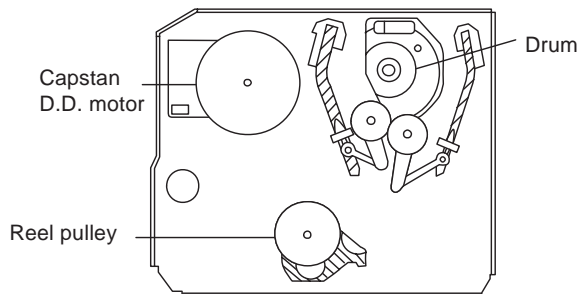


Figure 4-41-3.

4-23. INSTALLING THE SHIFTER



(Bottom side of mechanism chassis)

Figure 4-42.

1. Make sure that the loading gear is at the Phase-Matching point ① as shown below.
2. Install, paying attention to insert point ⑤ and release point ③.
3. For the phase matching at the insert point ①, see the Phase-Matching point ② as shown below.
4. Finally fix the inserts ① and ④.

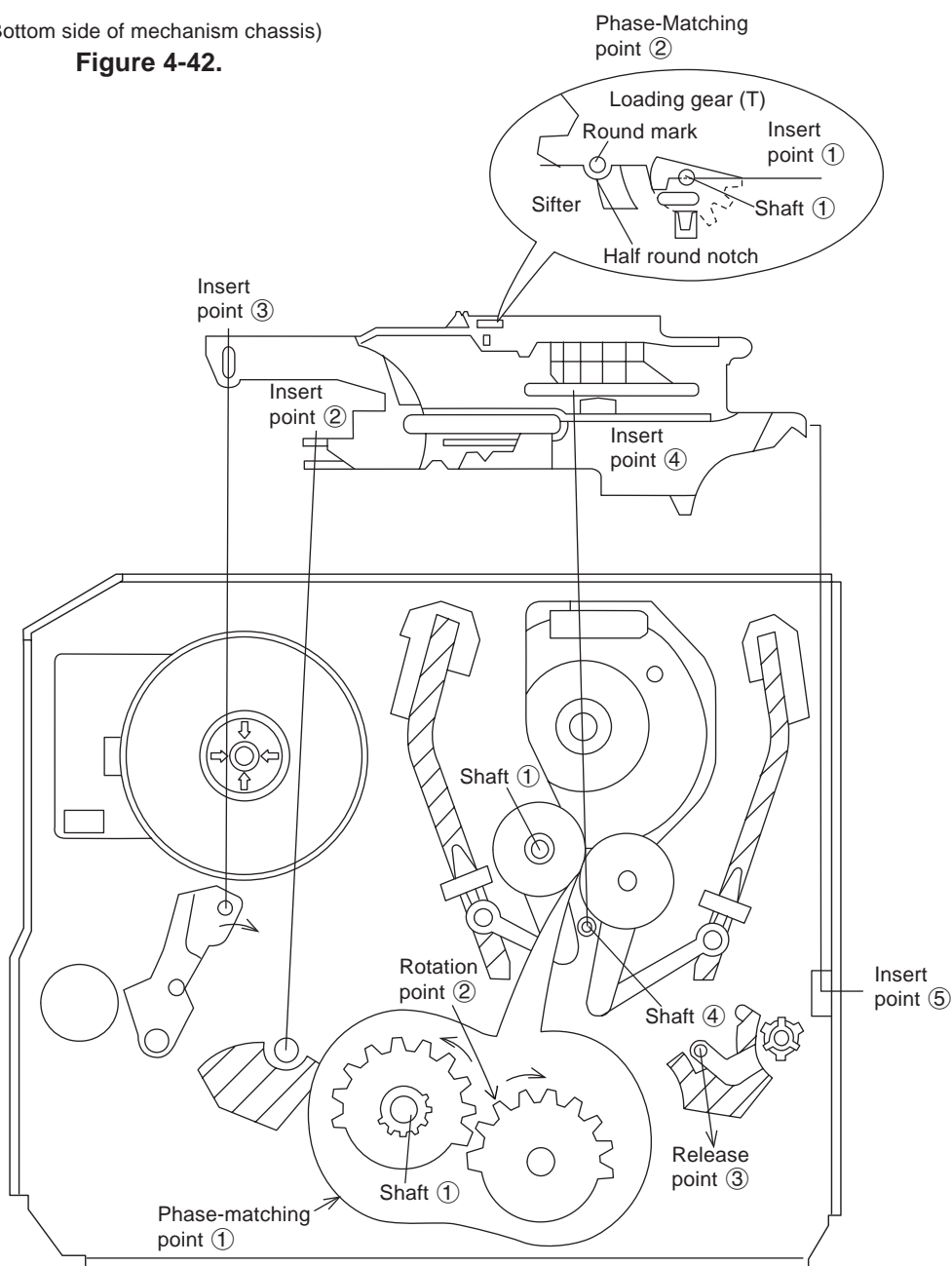
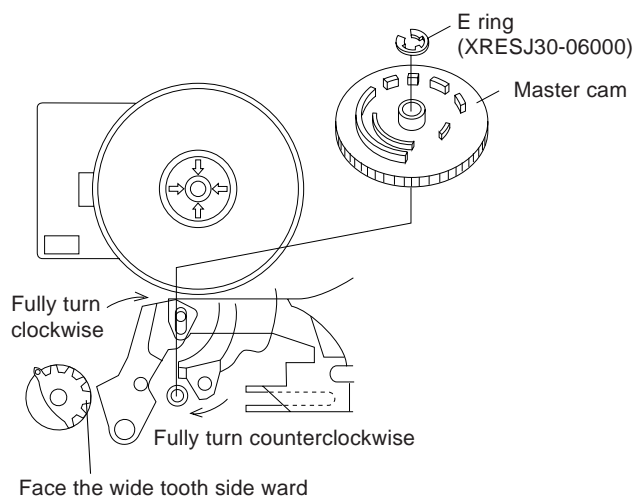


Figure 4-43.

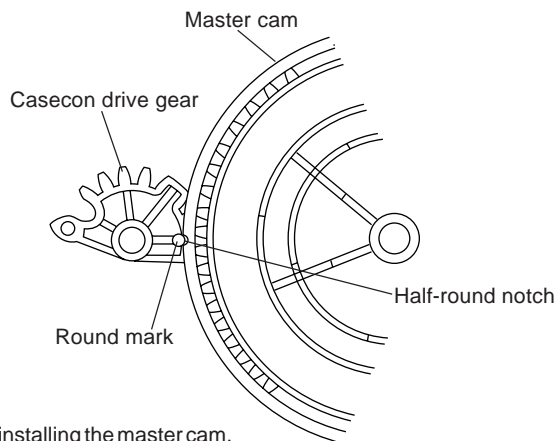
4-24. INSTALLING THE MASTER CAM (AT REAR SIDE OF MECHANISM CHASSIS)

1. Make sure beforehand that the shifter is at the point as shown below.
2. Place the master cam in the position as shown below.

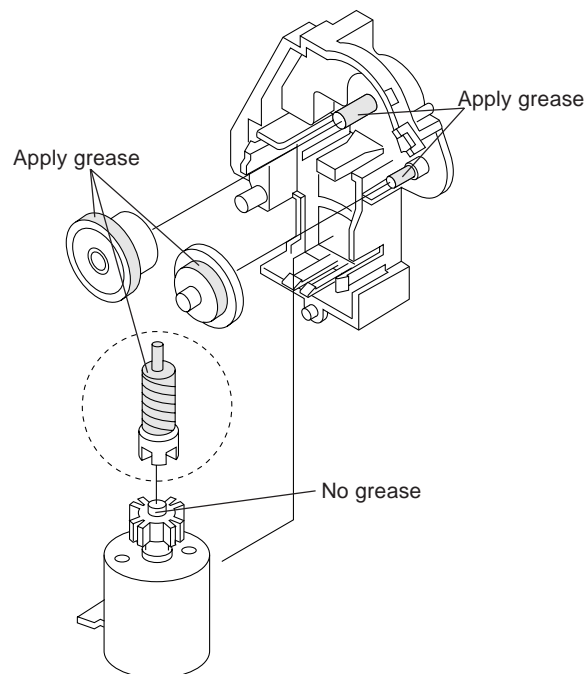
**Figure 4-44-1.****Note:**

See the figure below for the phase matching between the master cam and the casecon drive gear.

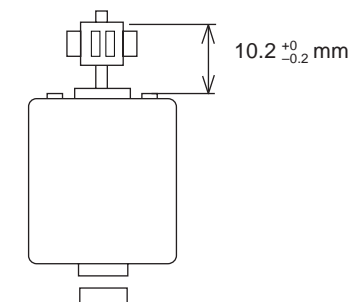
3. Finally fix with the E ring.



When installing the master cam, align the casecon drive gear round mark with the half-round notch of master cam.

Figure 4-44-2.**4-25. REPLACEMENT OF LOADING MOTOR****• Removal****Figure 4-45.****• Replacement**

Remove the loading motor, and install the replacement loading motor as shown below.

**Figure 4-46.**

The loading motor pressing-in must be less than 14.7 N (1,500 gf).

Adjust the distance between motor and pulley to $10.2^{+0}_{-0.2}$ mm).

4-26. ASSEMBLY OF CASSETTE HOUSING

1. Drive Gear and R Drive angle ass'y

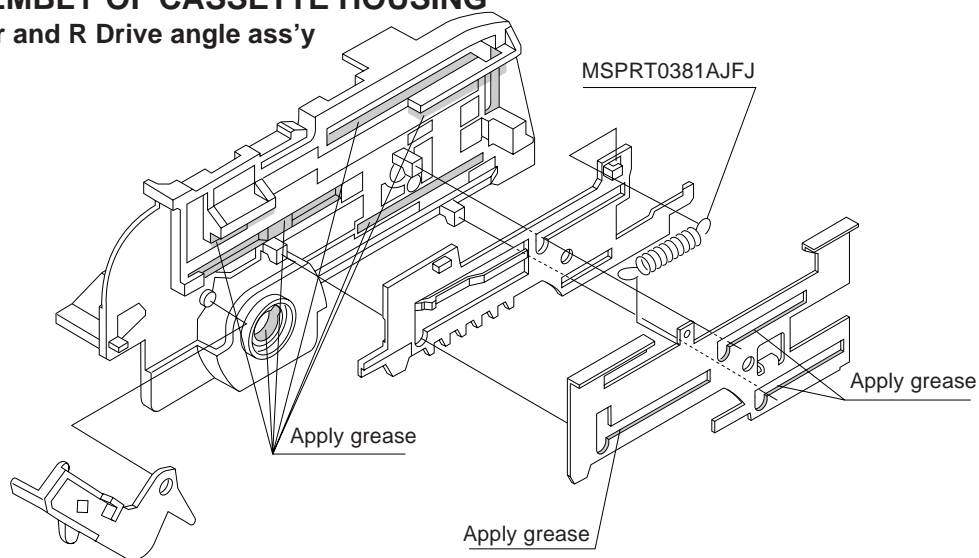


Figure 4-47.

2. Synchro Gear, Drive Gear L and Drive Gear R

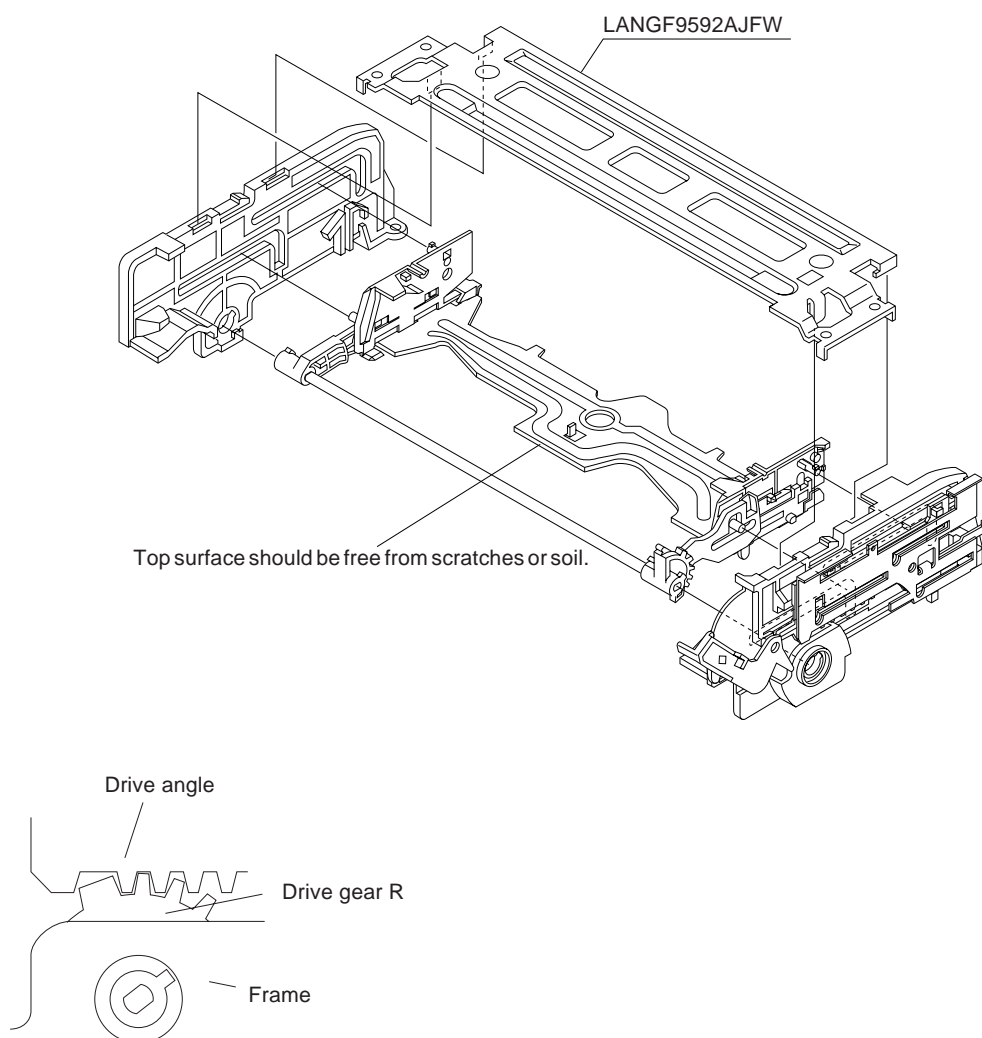


Figure 4-48.

5. ELECTRICAL ADJUSTMENT

Notes:

• Before the adjustment:

Electrical adjustments discussed here are often required after replacement of electronic components and mechanical parts such as video heads.

Check that the mechanism and all electric components are in good working condition prior to the adjustments, otherwise adjustments can not be completed.

• Instruments required:

- Color TV monitor
- Audio signal generator
- Blank video cassette tape
- Screwdriver for adjustment
- RF signal generator
- Dual-trace oscilloscope
- AC milli-voltmeter
- Alignment tape (VROEFZHS)
- Color bar generator

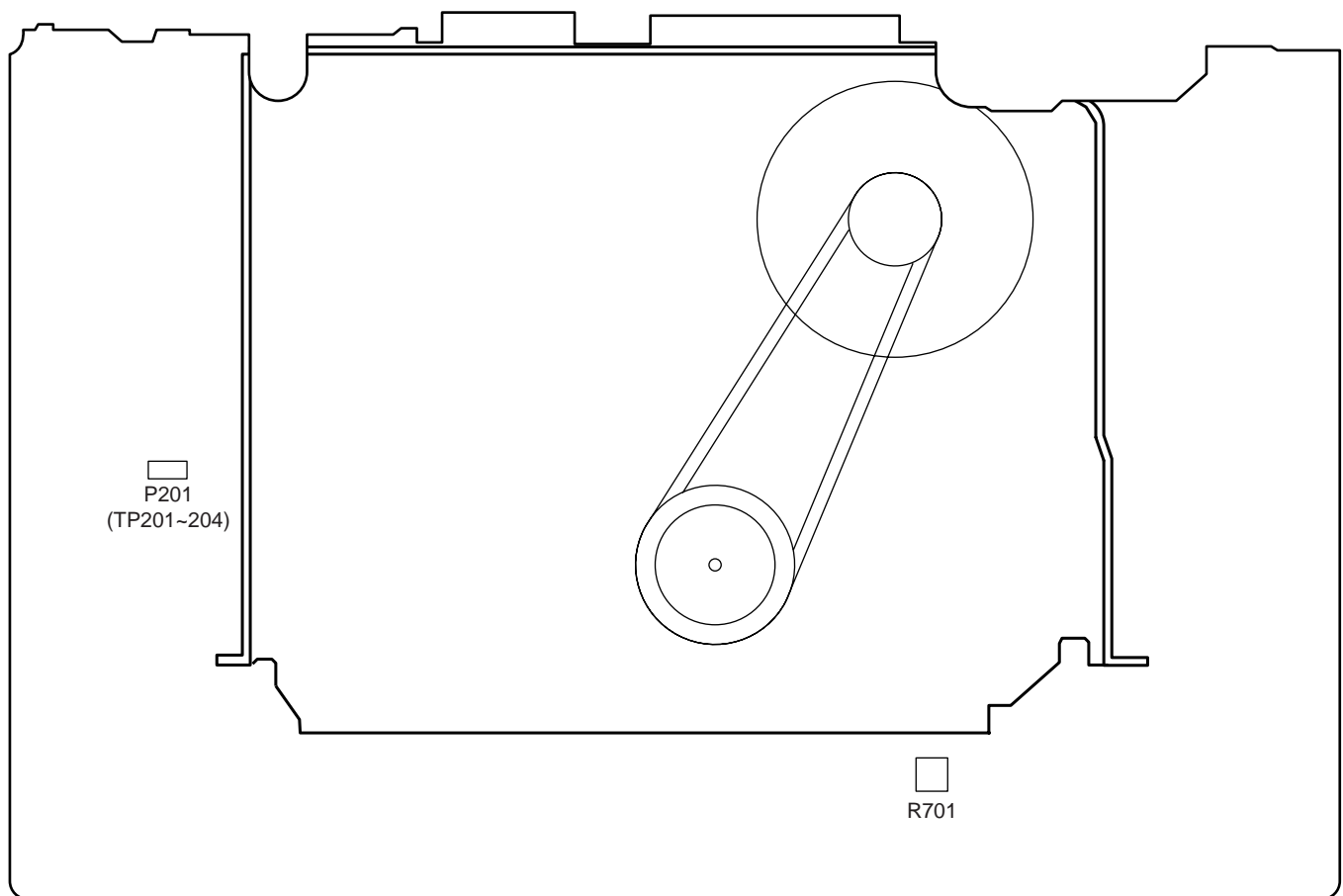


Figure 5-1.

SERVO CIRCUIT ADJUSTMENT

5-1 ADJUSTMENT OF HEAD SWITCHING POINT

Measuring instrument	Dual-trace oscilloscope
Mode	Playback
Cassette	Alignment tape (VROEFZHS)
Test point	VIDEO OUT jack to CH2 TP202 (Sig.)~TP203 (GND) to CH1
Control	R701 Head switching point adjustment control
Specification	$6.0 \pm 0.5H$ (lines)

1. Remove the front panel and play the alignment tape.
2. Connect a dual-trace oscilloscope to the VIDEO OUT jack and TP202 (Sig.) and TP203 (GND).
(Trigger the oscilloscope with the head switching pulse on TP202.)
3. Playback the alignment tape, and then short circuit between TP801 and TP802 on the operation PWB.
4. Adjust R701 so that the leading edge of the head switching pulse is 6.0H (lines) ahead of the vertical sync as shown in Figure 5-2.
5. Press the STOP button to quit test mode.

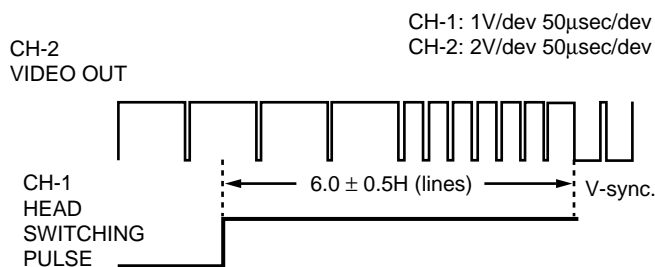


Figure 5-2.

5-2 ADJUSTMENT OF FV (False Vertical Sync) OF STILL PICTURE

Measuring instrument	Color TV monitor
Mode	Playback still
Cassette	Self-recorded tape (SP mode) (See Note below 2)
Control	Tracking control buttons(+) or (–)
Specification	No vertical jitter of picture

1. Play a cassette which was recorded by the unit in SP mode.
2. Press the PAUSE/STILL button to freeze the picture.
3. Look at the monitor screen and adjust (+) or (–) TRACKING buttons so that the vertical jitter of the picture is minimized.
4. Play and freeze the self-recorded tape in EP mode and make sure vertical jitter of the picture is not noticeable.

Note:

- 1 The FV goes back to the it's initial state when the unit is put into the system controller reset mode due to power failure, etc.
In this case, preset the FV once again.
- 2 Self-recorded tape is a cassette whose program was recorded by the unit being adjusted.

5-3 CHECKING OF OFF TRACK

Measuring instrument	Color TV monitor
Mode	Playback
Cassette	Self-recorded tape (EP mode) (See Note below)
Control	Tracking control buttons(+) or (–)
Specification	No Poor picture and Hi-Fi sound

1. Play a cassette which was recorded by the unit in EP mode.
2. Short circuit between TP801 and TP802 on the operation PWB to center tracking.
3. Press the tracking buttons (+) or (–) 20 times each to bring the tracking off center. Make sure that:
 - 1) There is nothing unusual on the playback screen.
 - 2) There is nothing unusual in the Hi-Fi sound (for the Hi-Fi models only).
4. Press the STOP button to quit test mode.

Note:

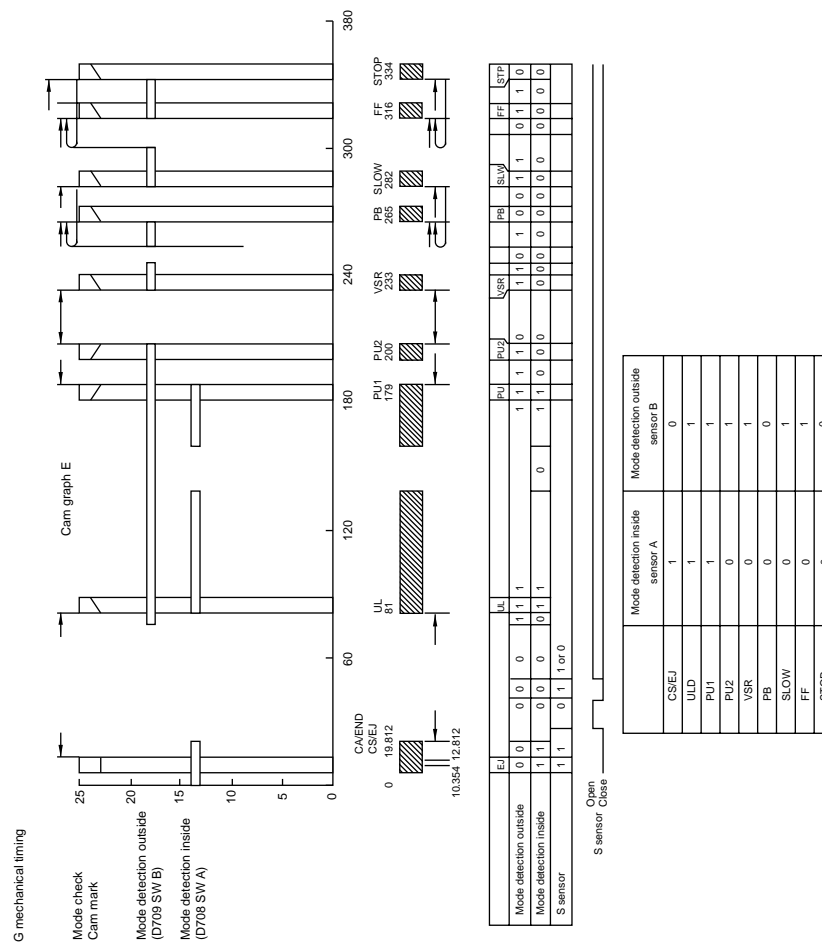
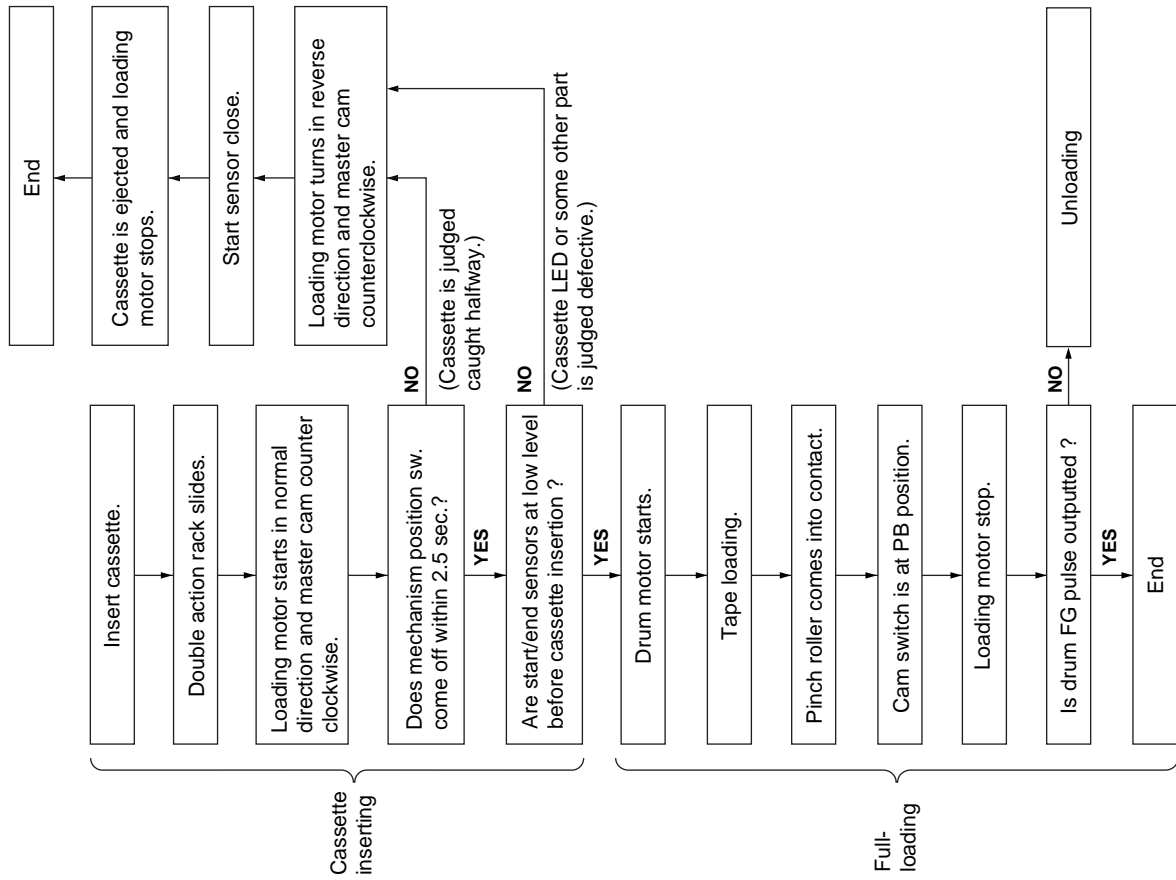
Self-recorded tape is a cassette whose program was recorded by the unit being adjusted.

6. MECHANISM OPERATION FLOWCHART AND TROUBLESHOOTING GUIDE

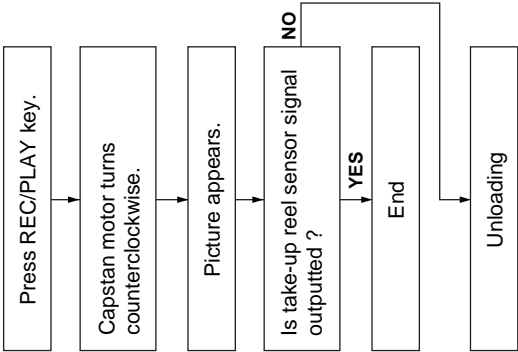
MECHANISM OPERATION FLOWCHART

* This flowchart describes the outline of the mechanism's operation, but does not give its details.

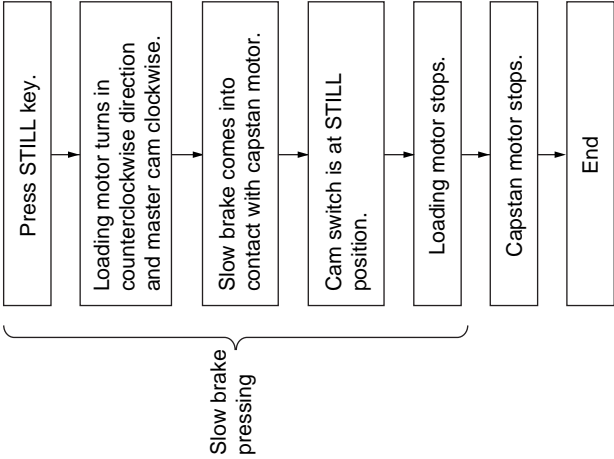
CASSETTE INSERTION → STOP



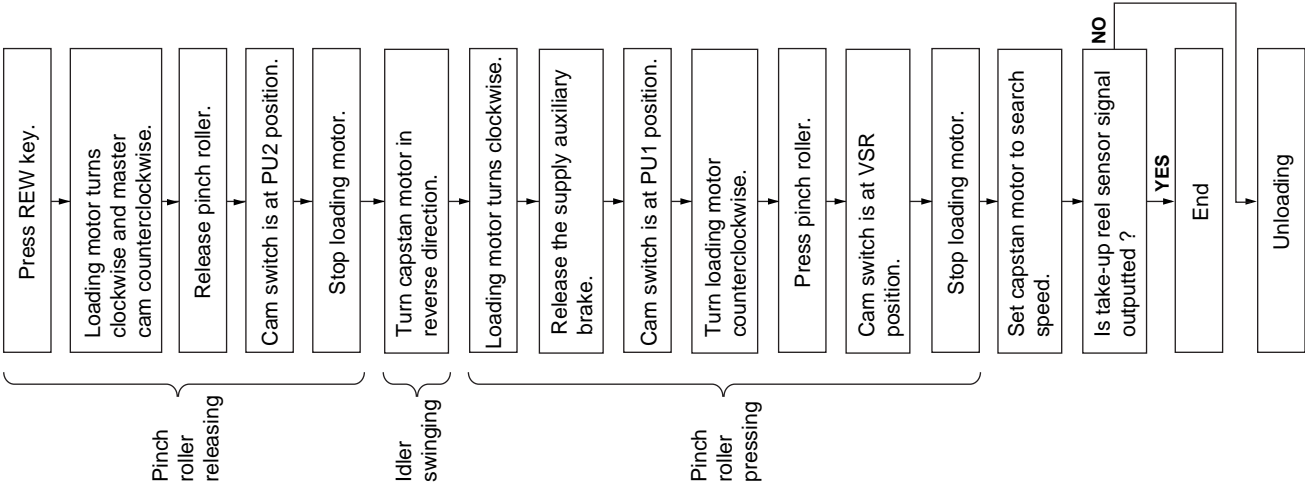
STOP → REC/PLAY



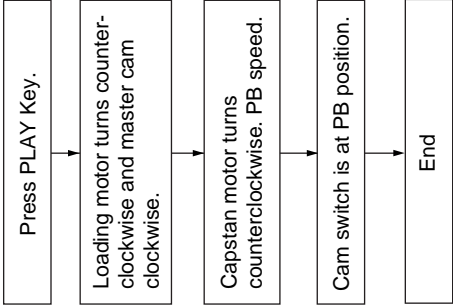
PLAY → STILL



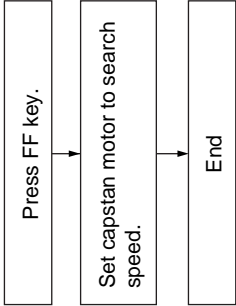
PLAY → VSR



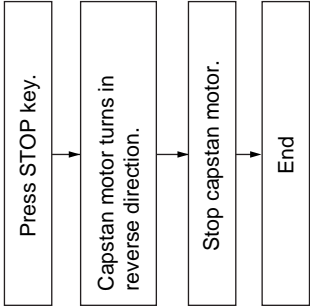
VSR → PLAY



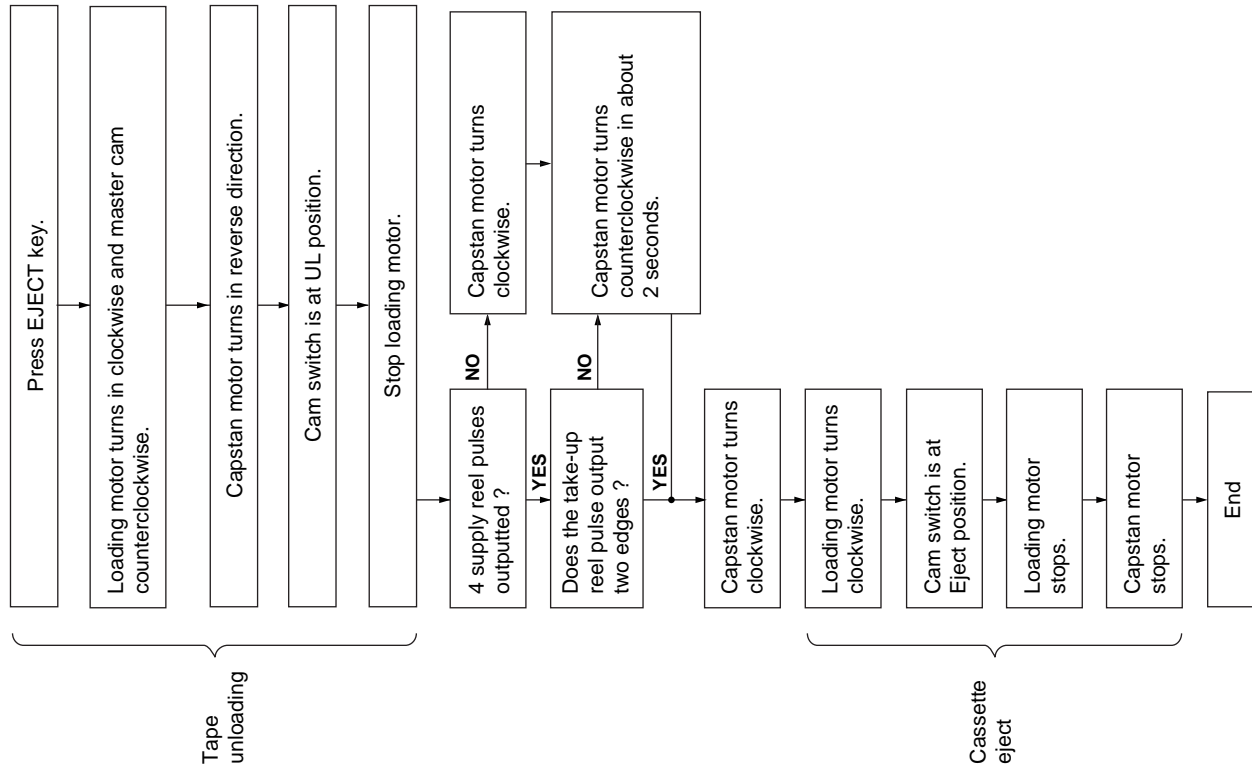
PLAY → VSF



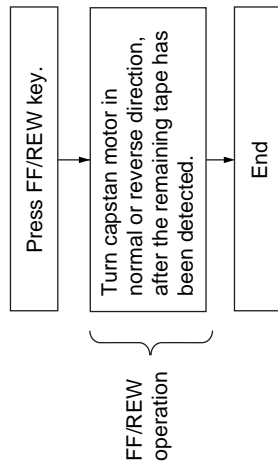
REC/PLAY → STOP



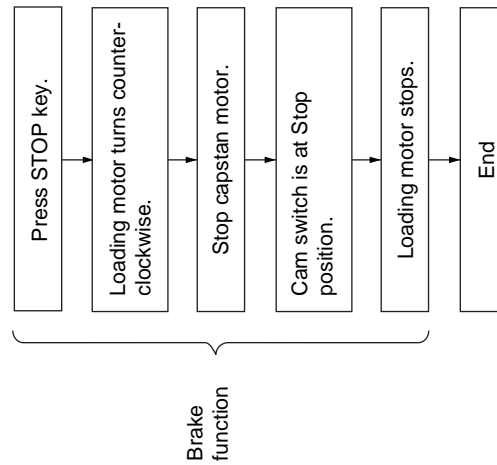
STOP → CASSETTE EJECT



STOP → FF/REW

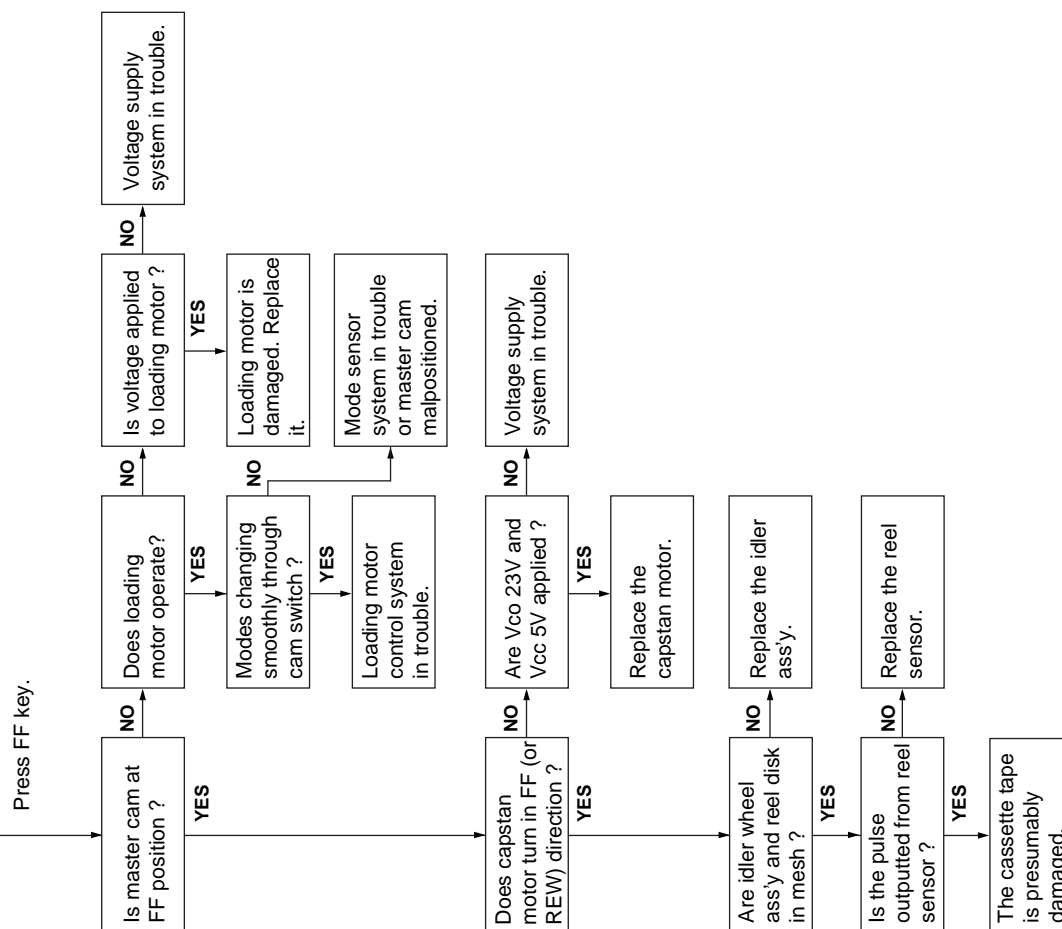


FF/REW → STOP

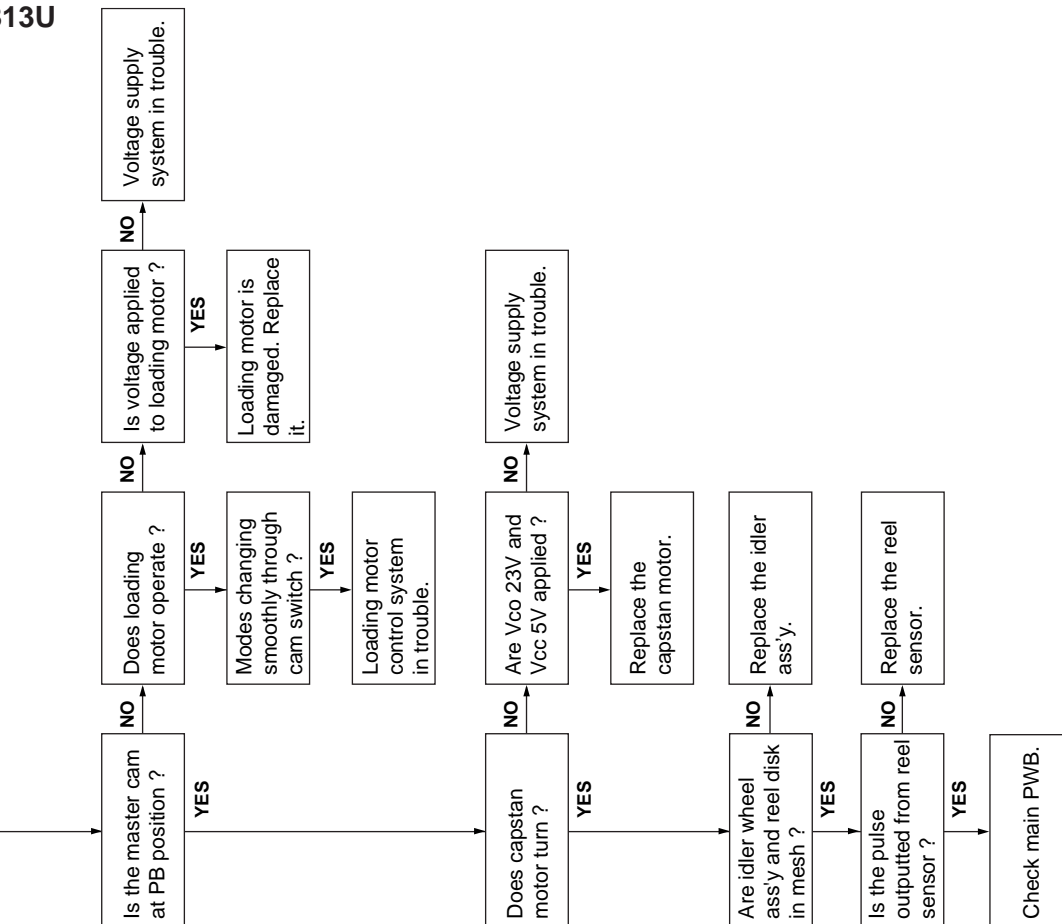


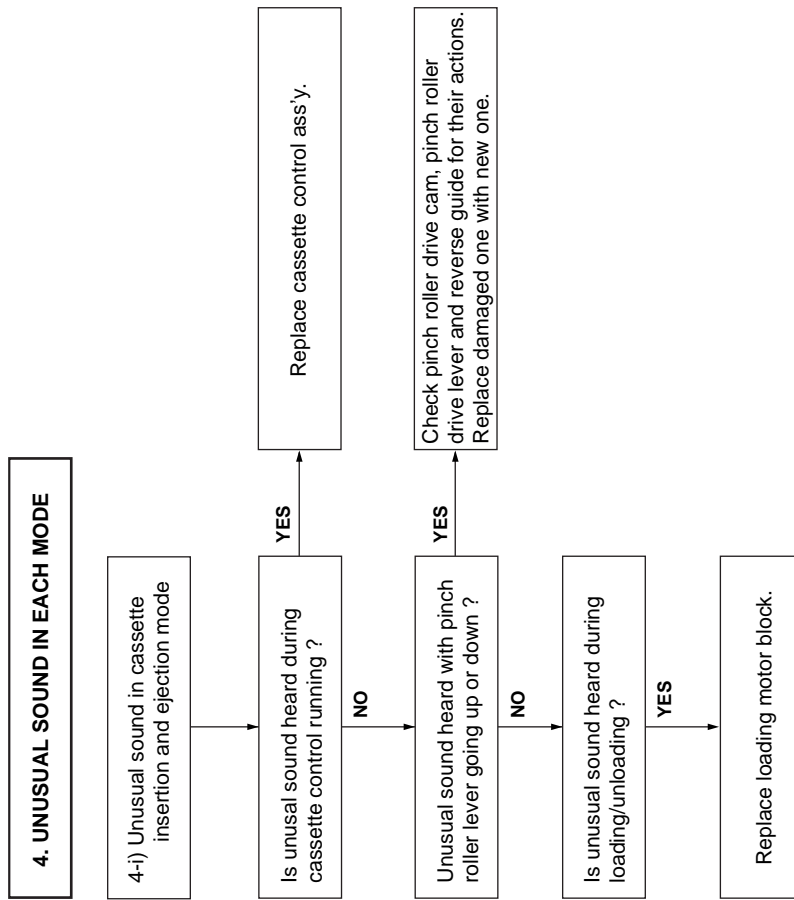
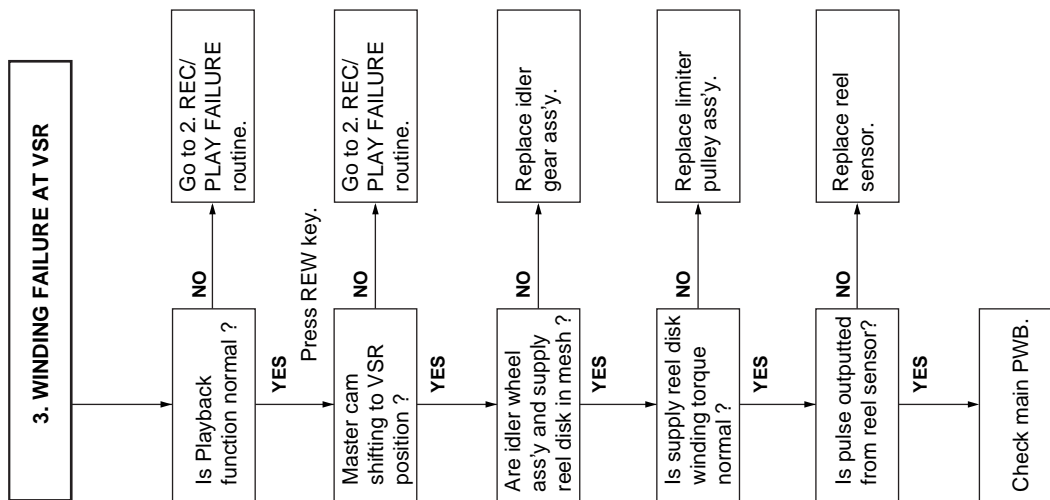
MECHANISM TROUBLESHOOTING

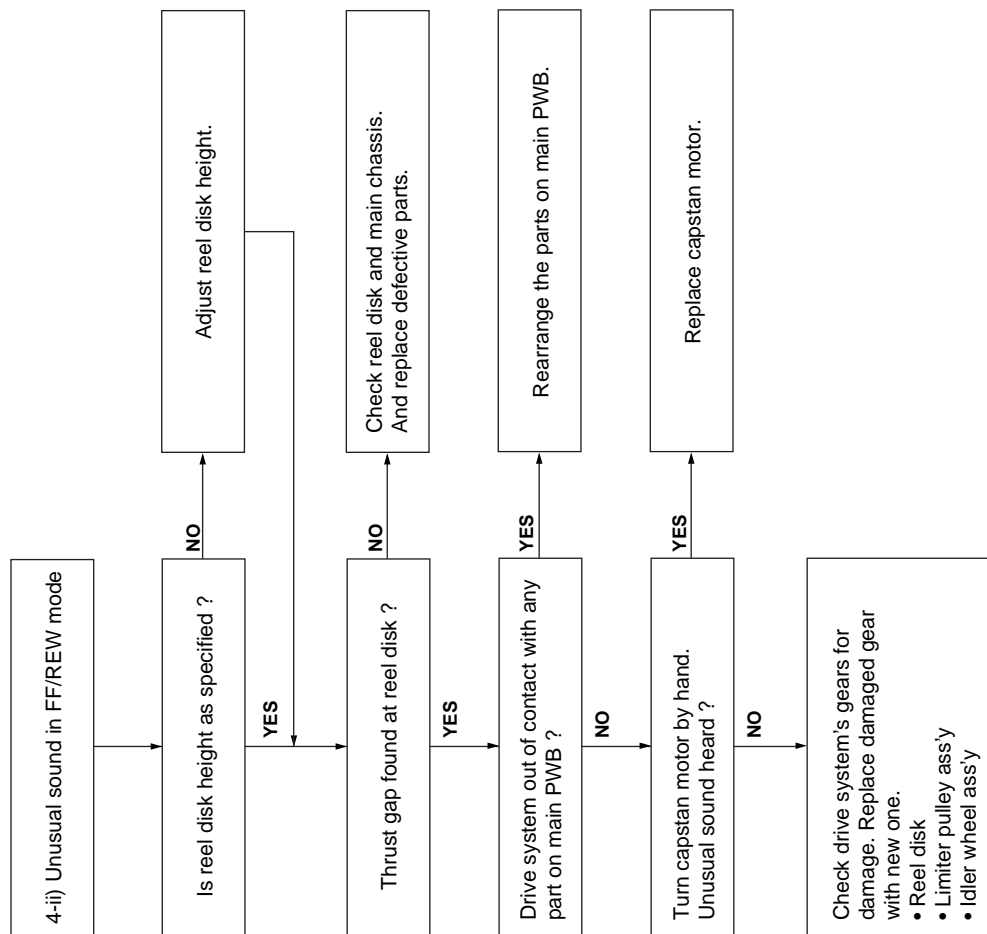
1. FF/REW FAILURE (NO TAPE WINDING)



2. REC/PLAY FAILURE (MODE RELEASE)

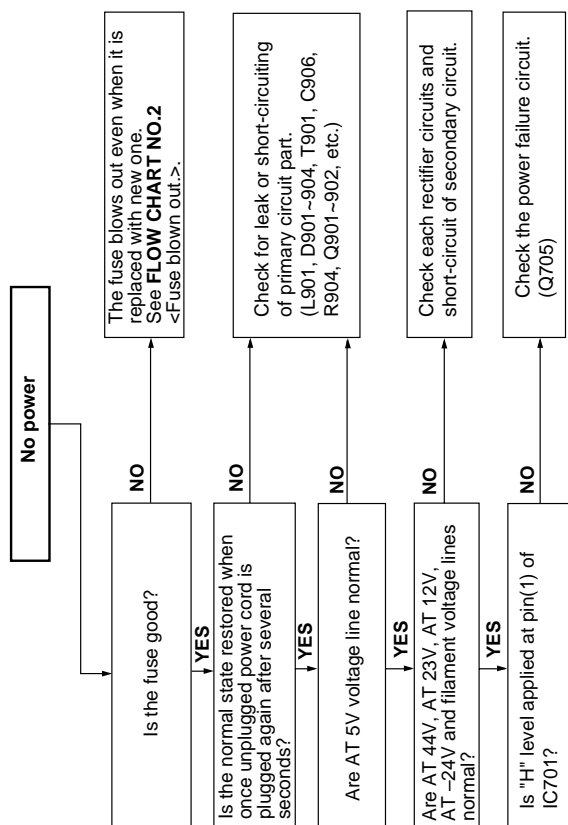




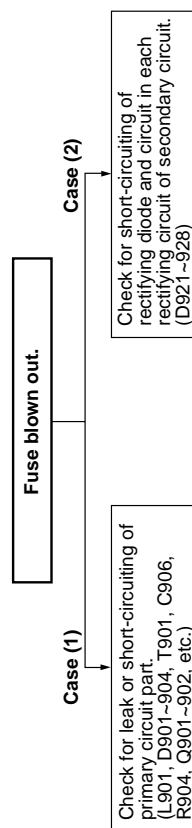


7. TROUBLESHOOTING

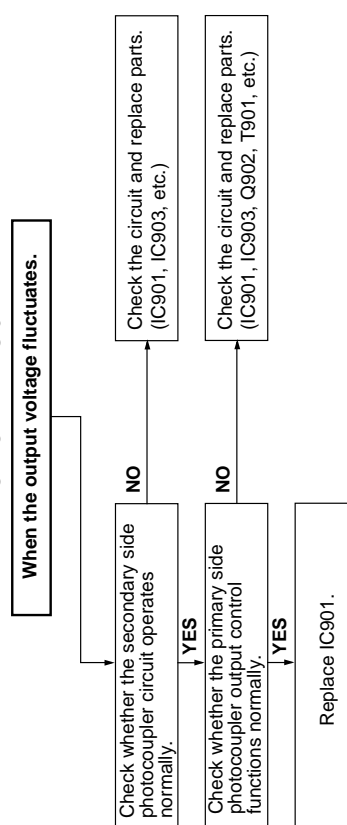
FLOW CHART NO.1



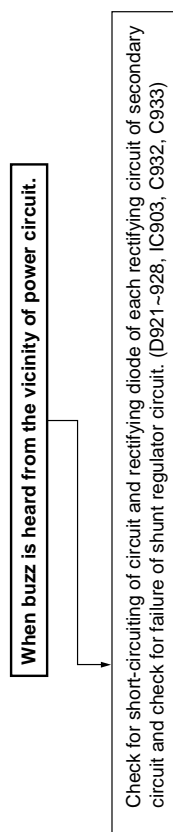
FLOW CHART NO.2



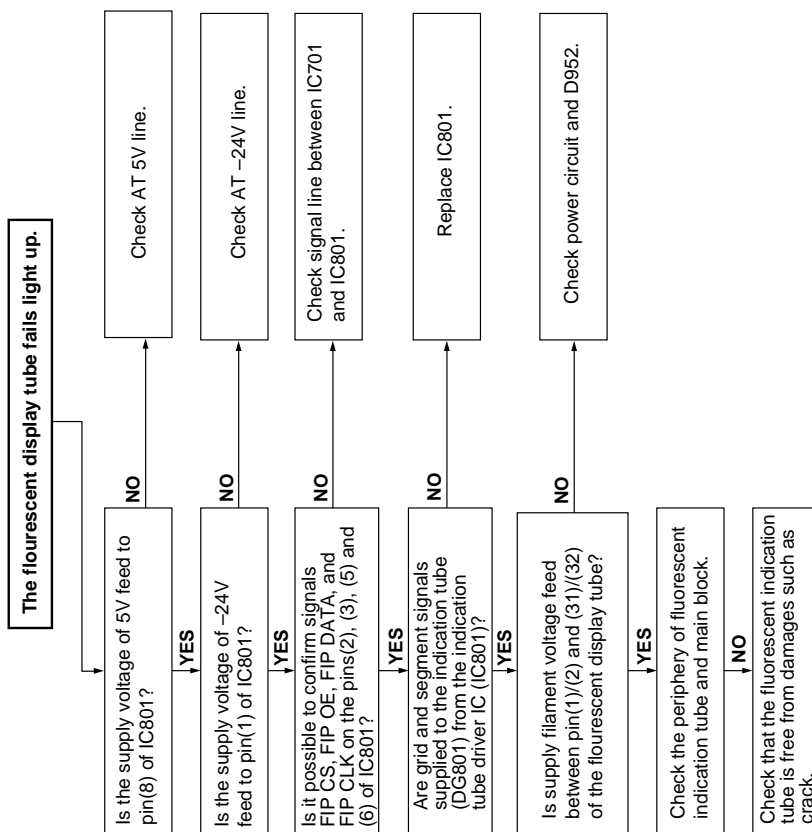
FLOW CHART NO.3



FLOW CHART NO.4

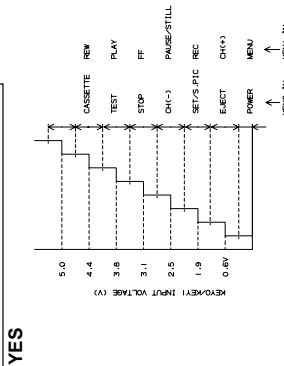
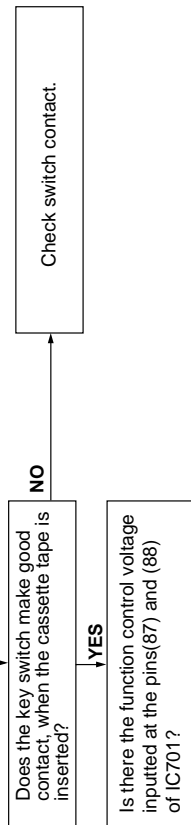


FLOW CHART NO.5



FLOW CHART NO.6

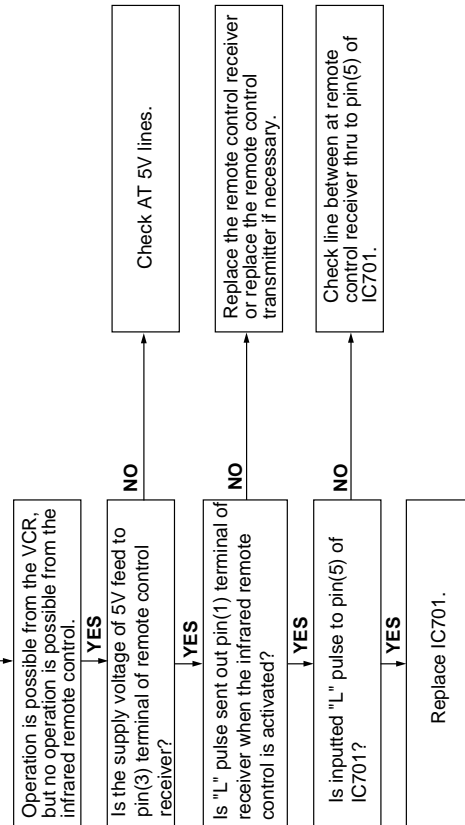
Key-in input is not received.



Check or place the peripheral circuit of IC701.

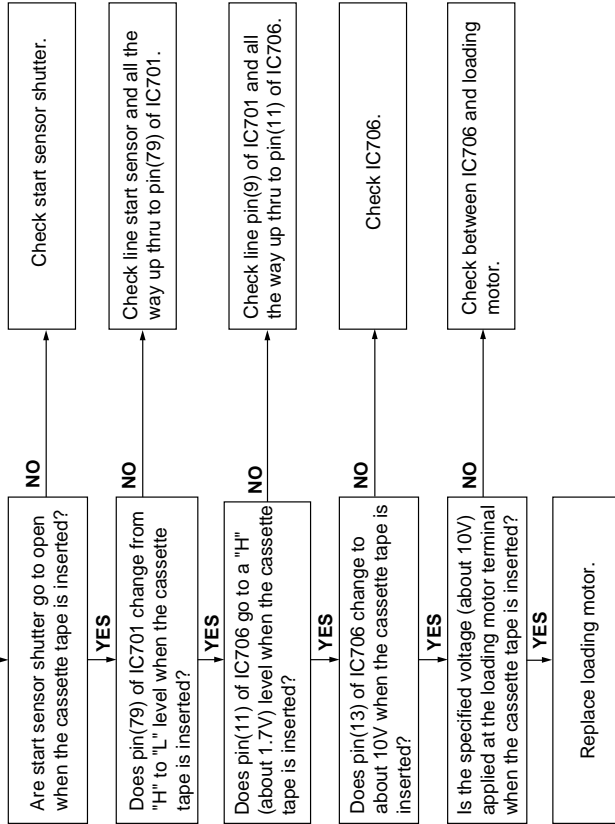
FLOW CHART NO.7

No operation is possible from the infrared remote control.



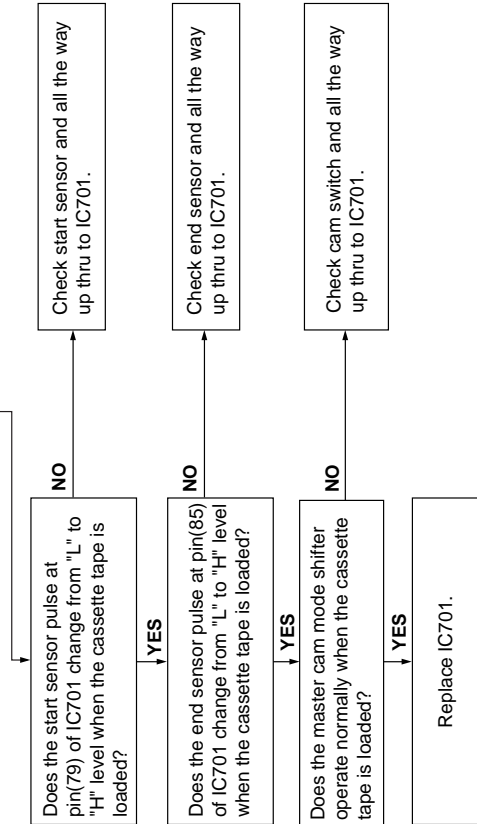
FLOW CHART NO.8

A cassette tape is not take in.



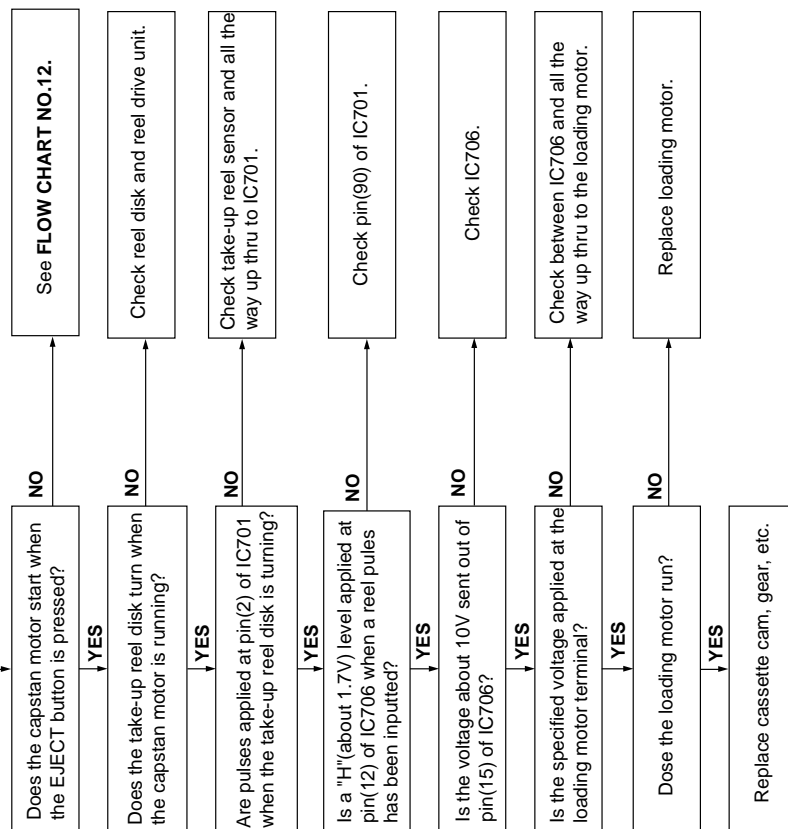
FLOW CHART NO.9

A cassette tape is taken in, but ejected at once.



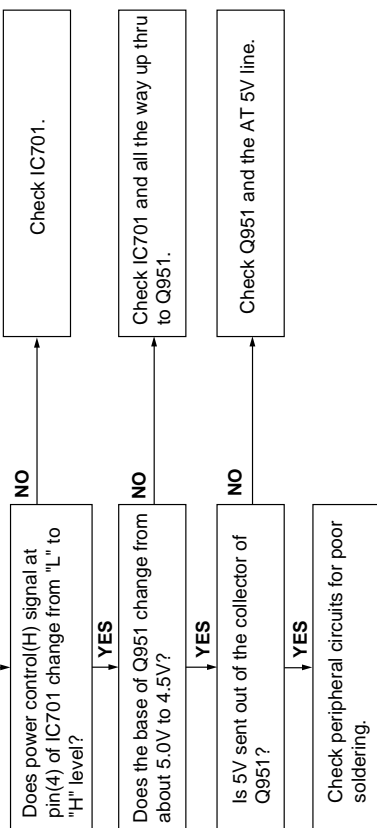
FLOW CHART NO.10

The cassette tape fails to eject.



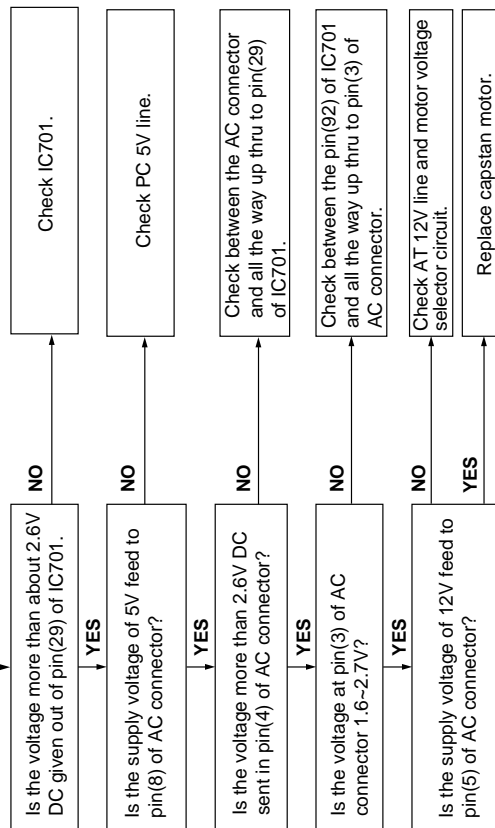
FLOW CHART NO.11

No power is turned on.

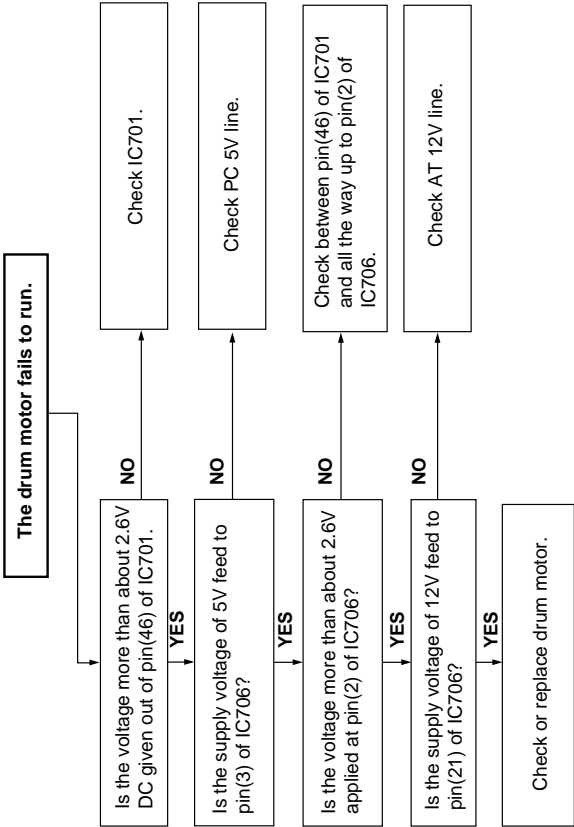


FLOW CHART NO.12

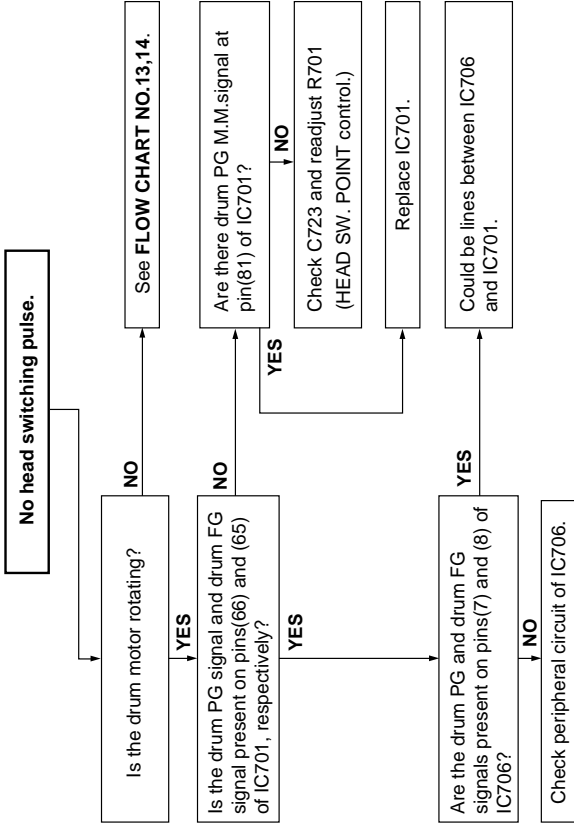
The capstan motor fails to run.



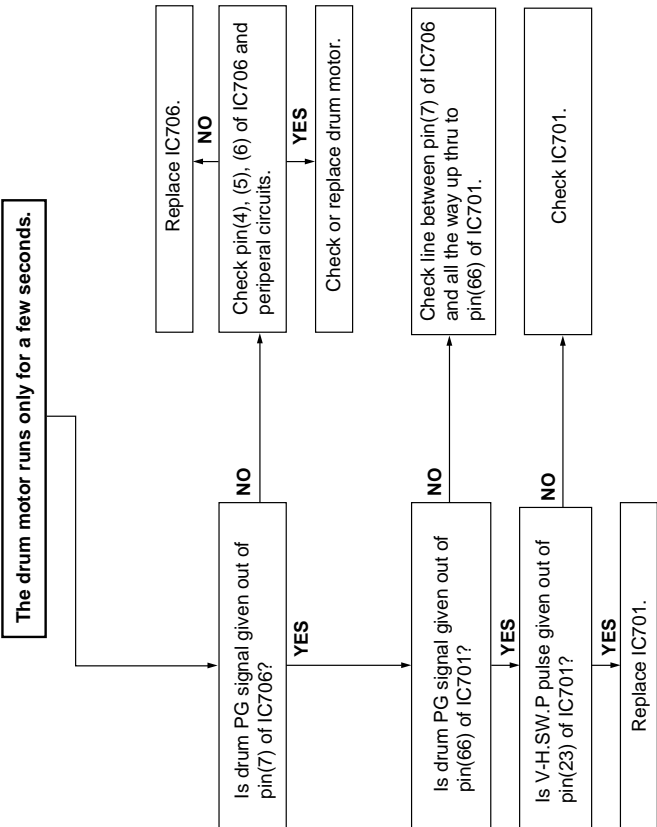
FLOW CHART NO.13



FLOW CHART NO.15

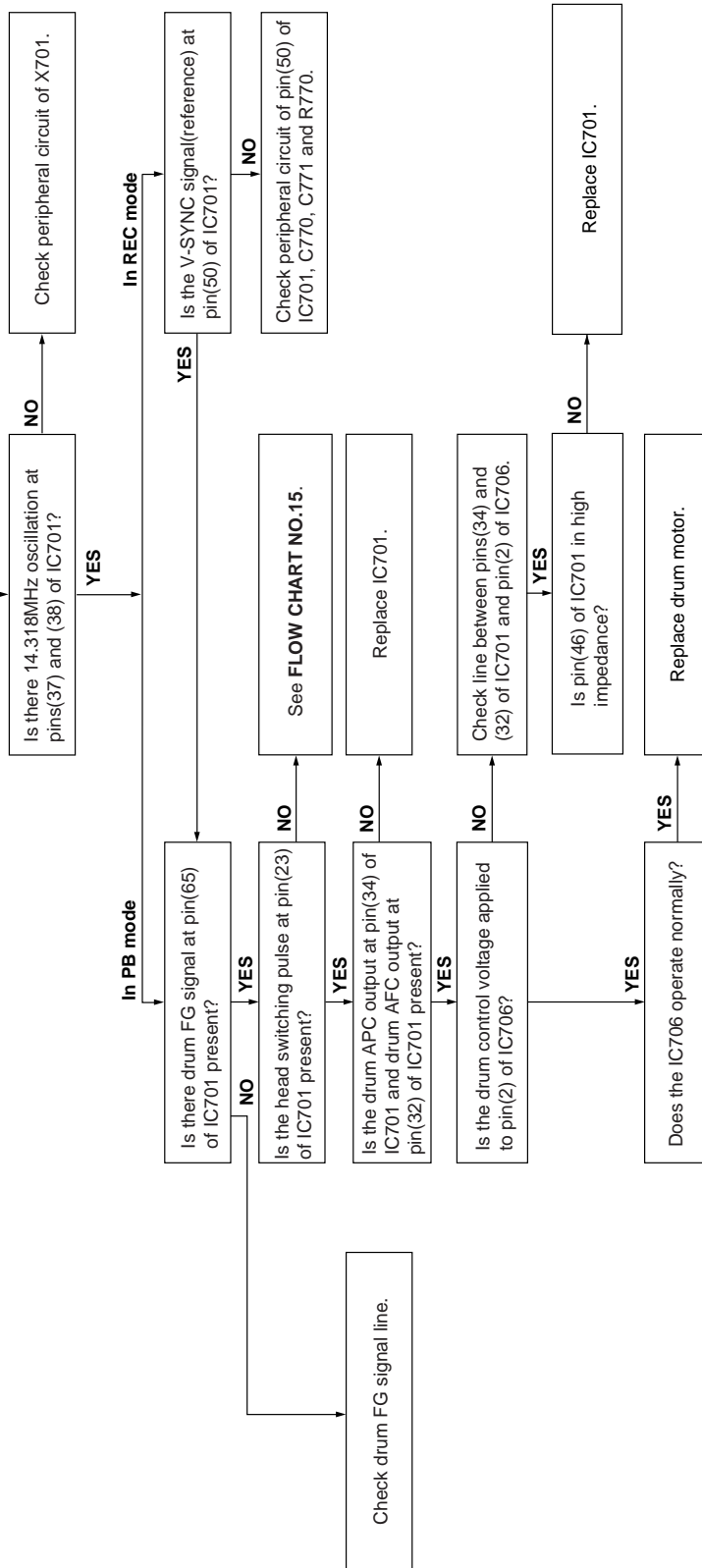


FLOW CHART NO.14



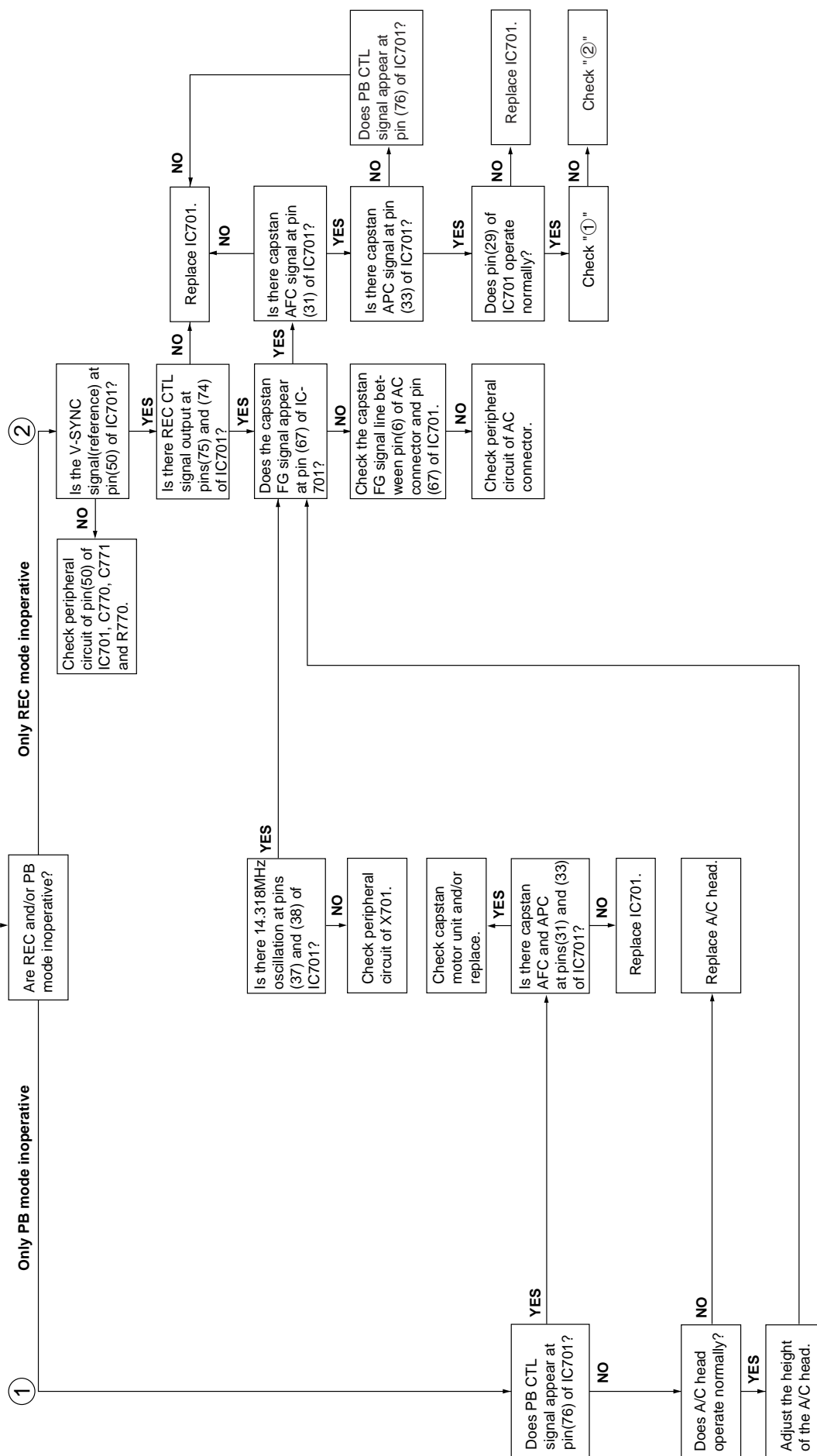
FLOW CHART NO.16

Drum servo does not function.

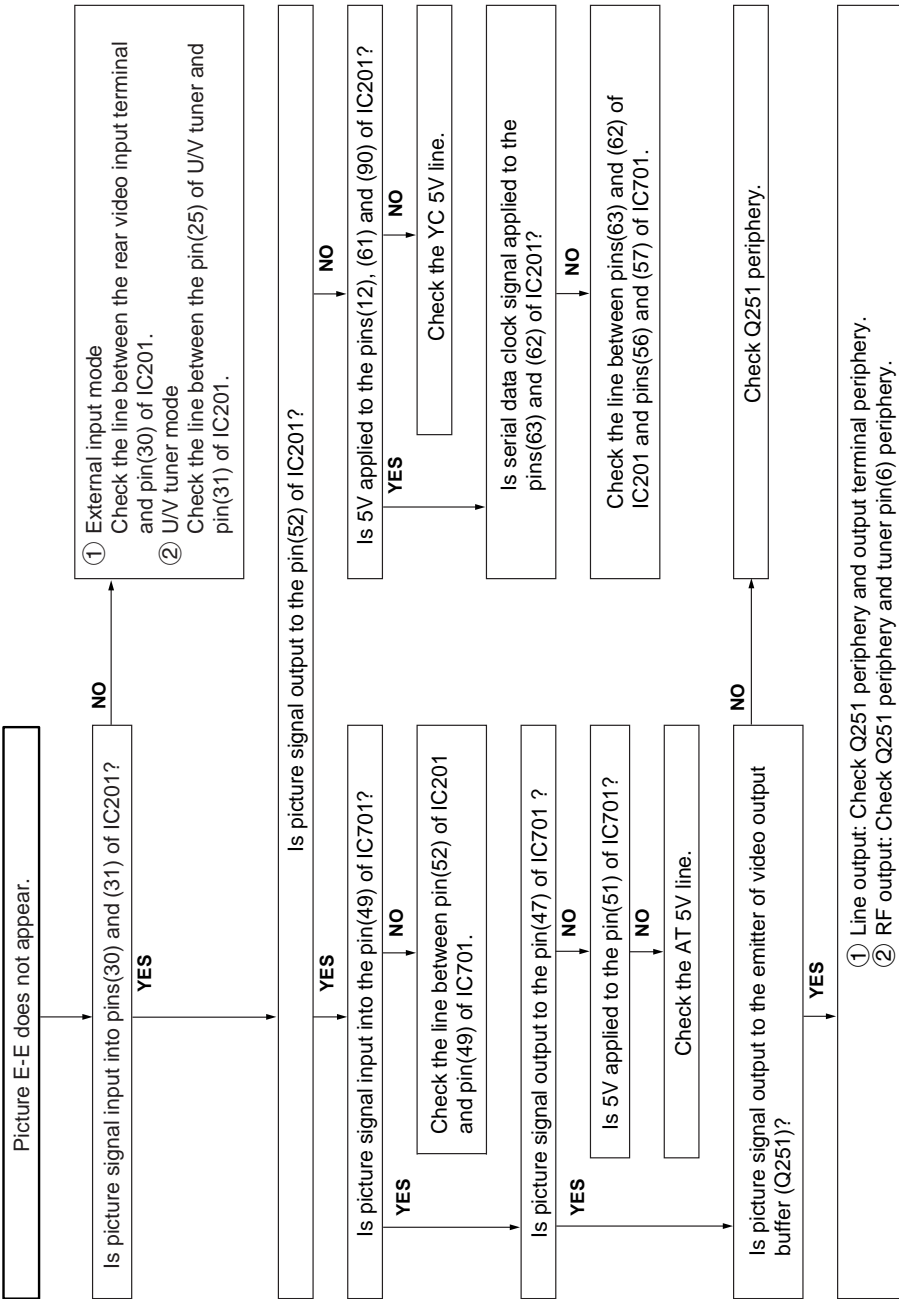


FLOW CHART NO.17

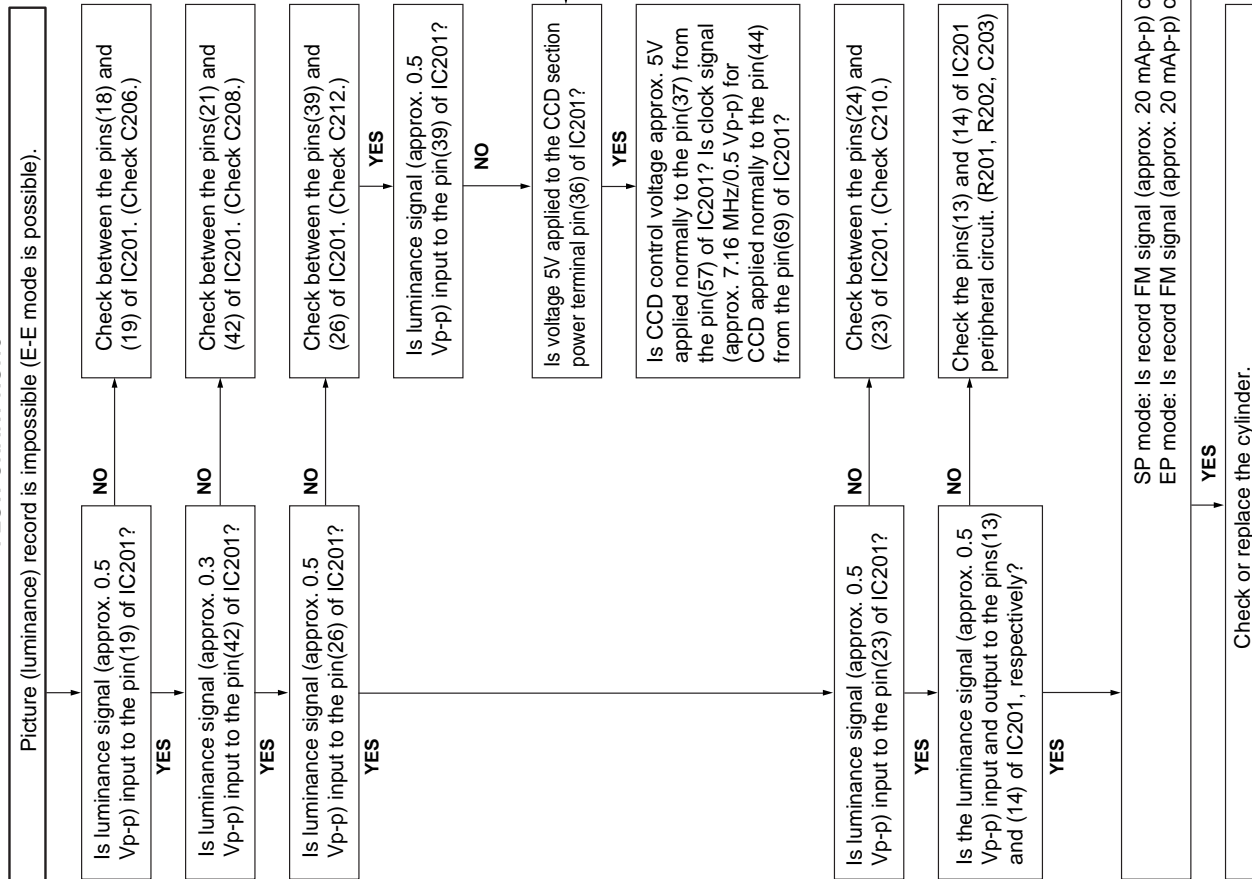
Capstan servo does not function.



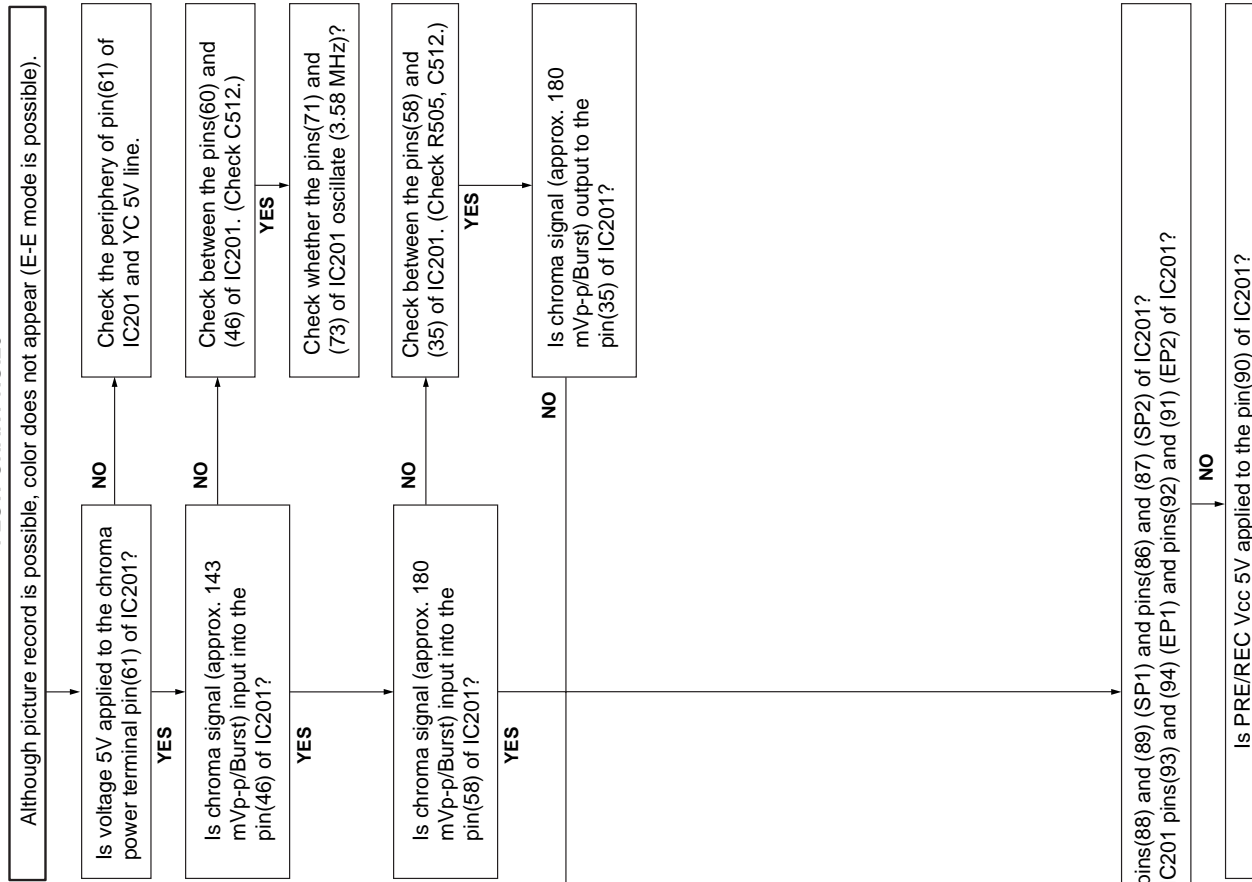
FLOW CHART NO.18



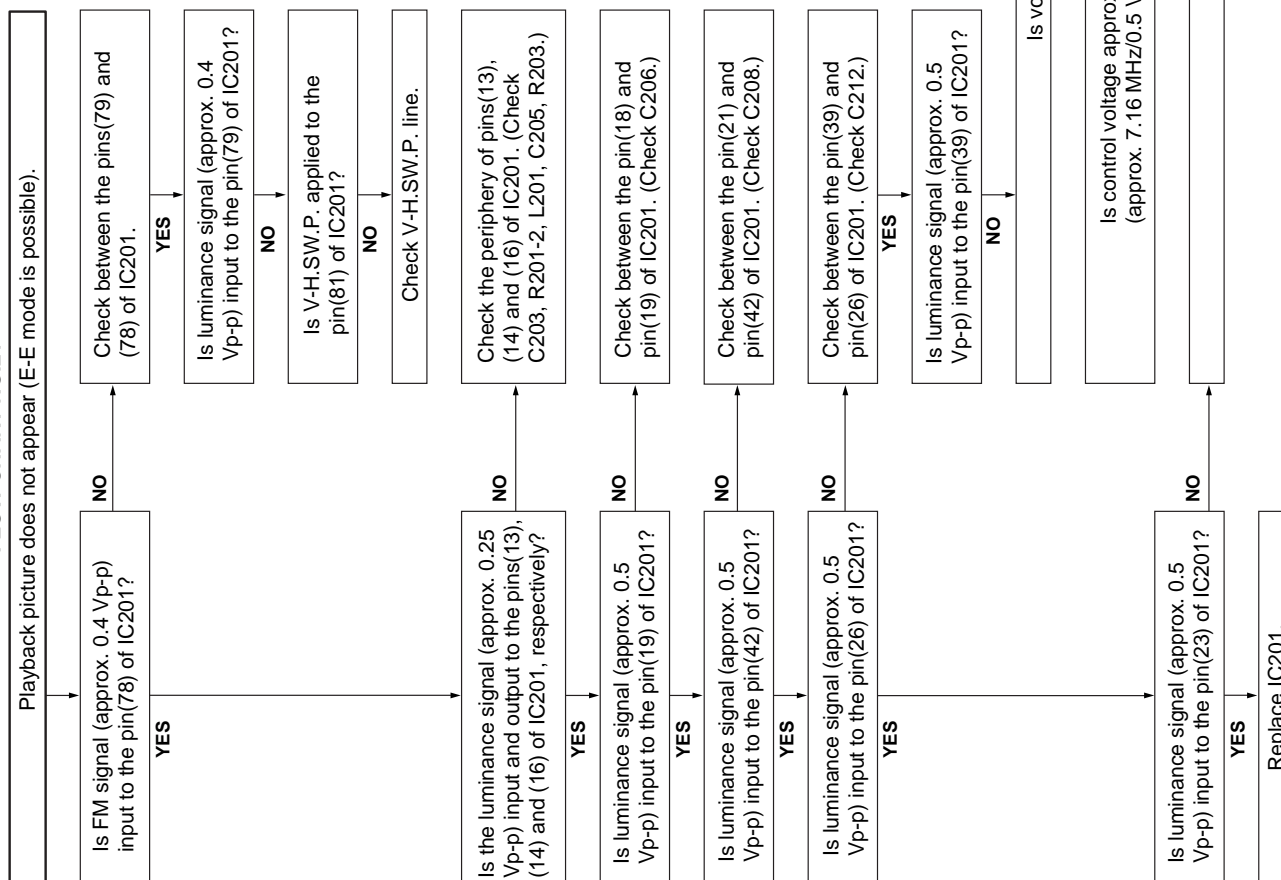
FLOW CHART NO.19



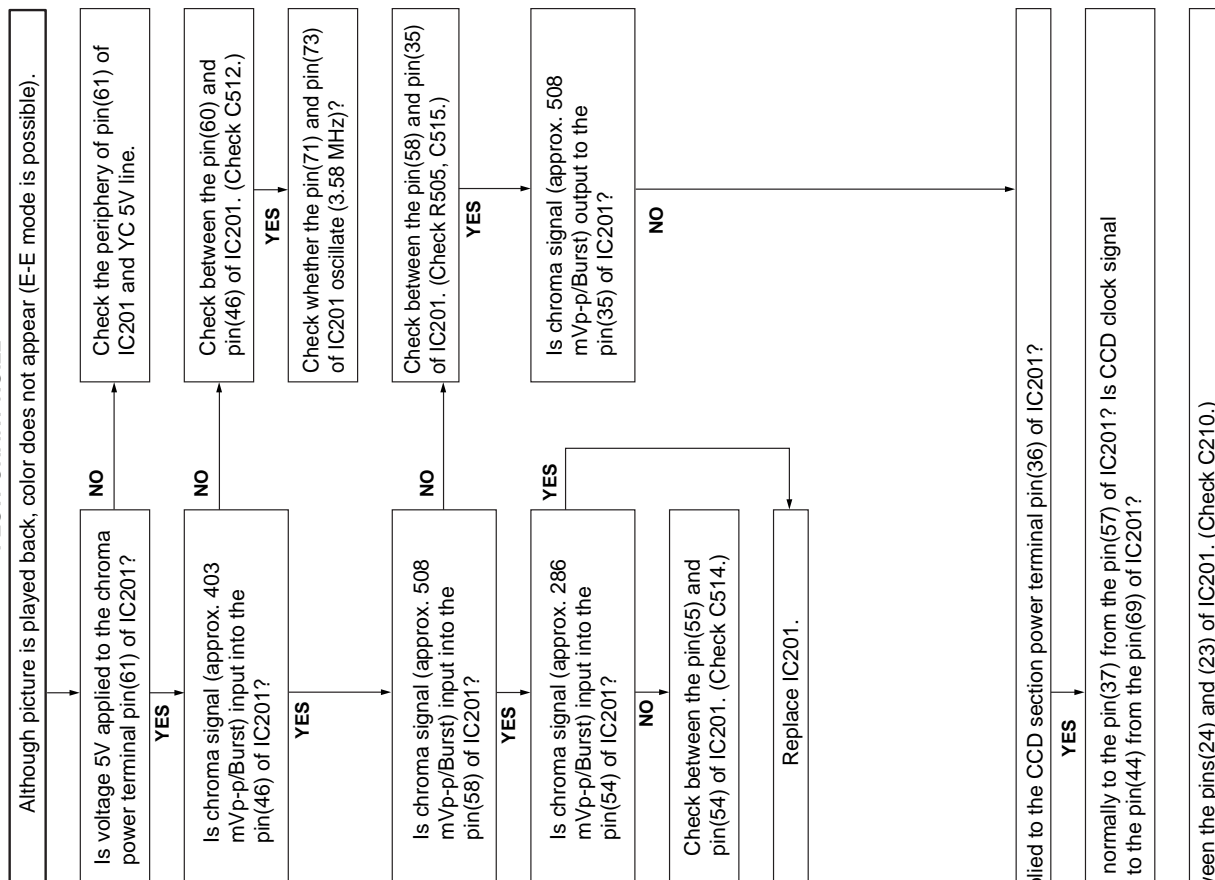
FLOW CHART NO.20



FLOW CHART NO.21

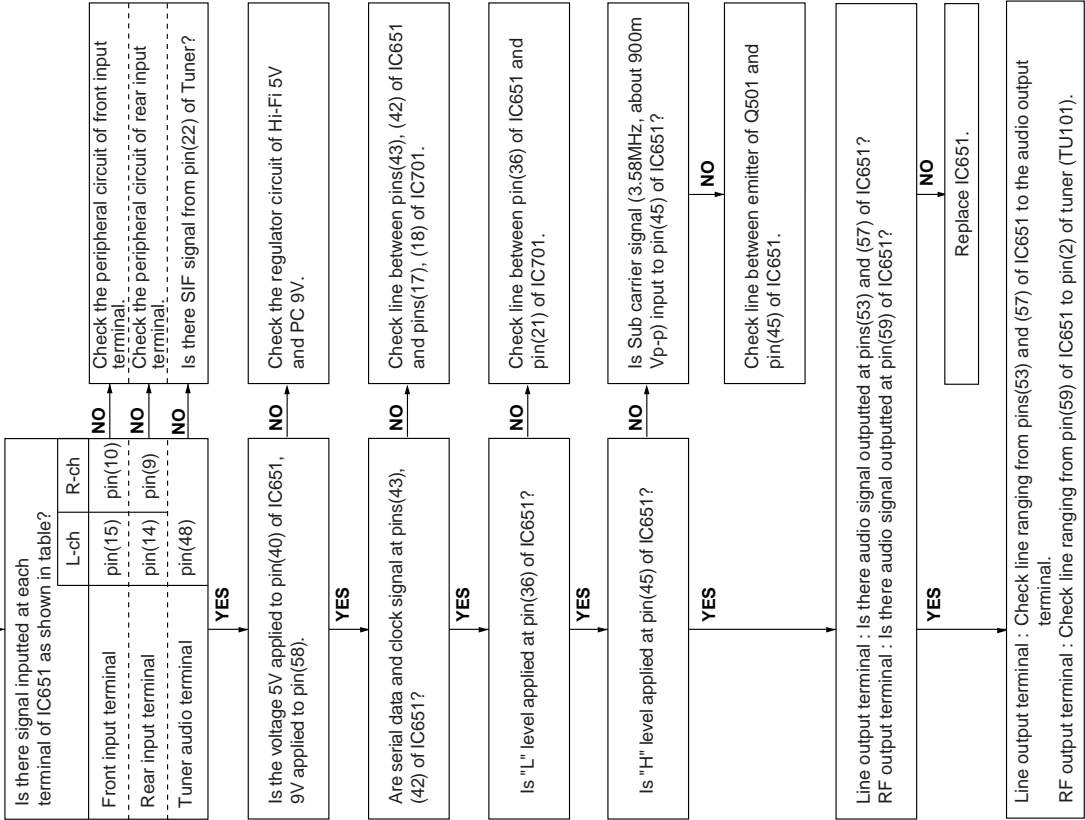


FLOW CHART NO.22

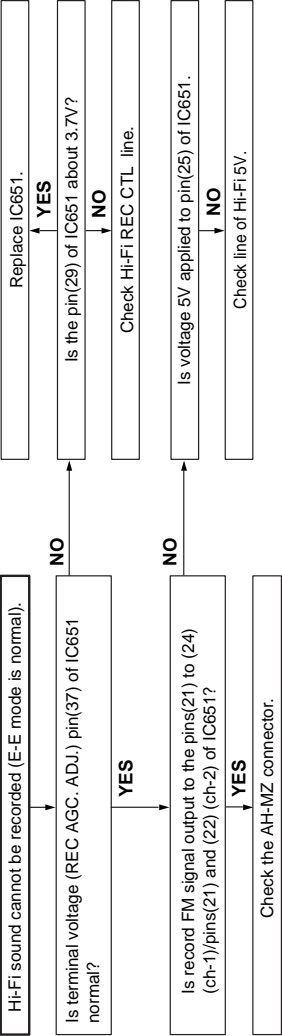


FLOW CHART NO.23

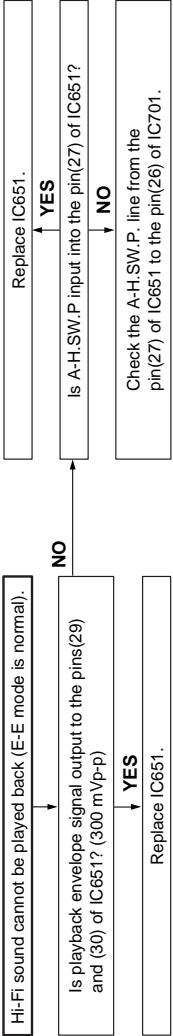
No Hi-Fi E-E sound heard.



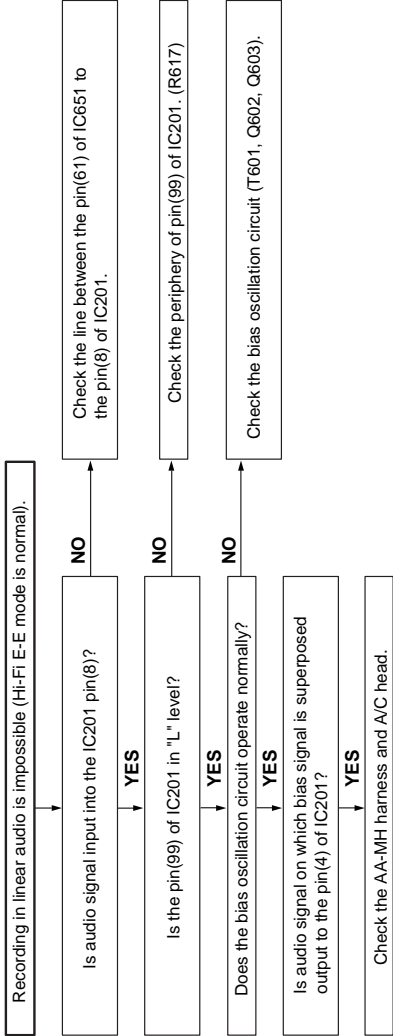
FLOW CHART NO.24



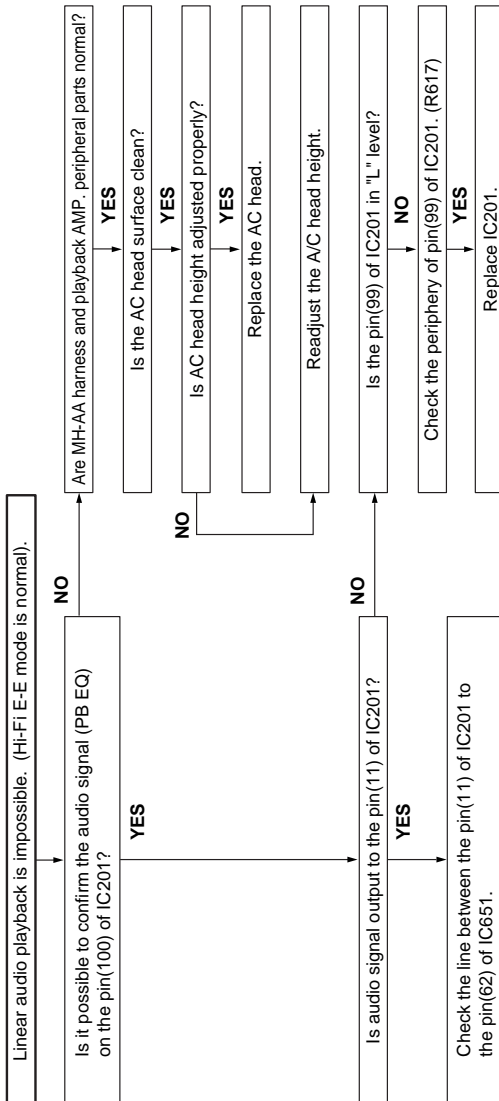
FLOW CHART NO.25



FLOW CHART NO.26

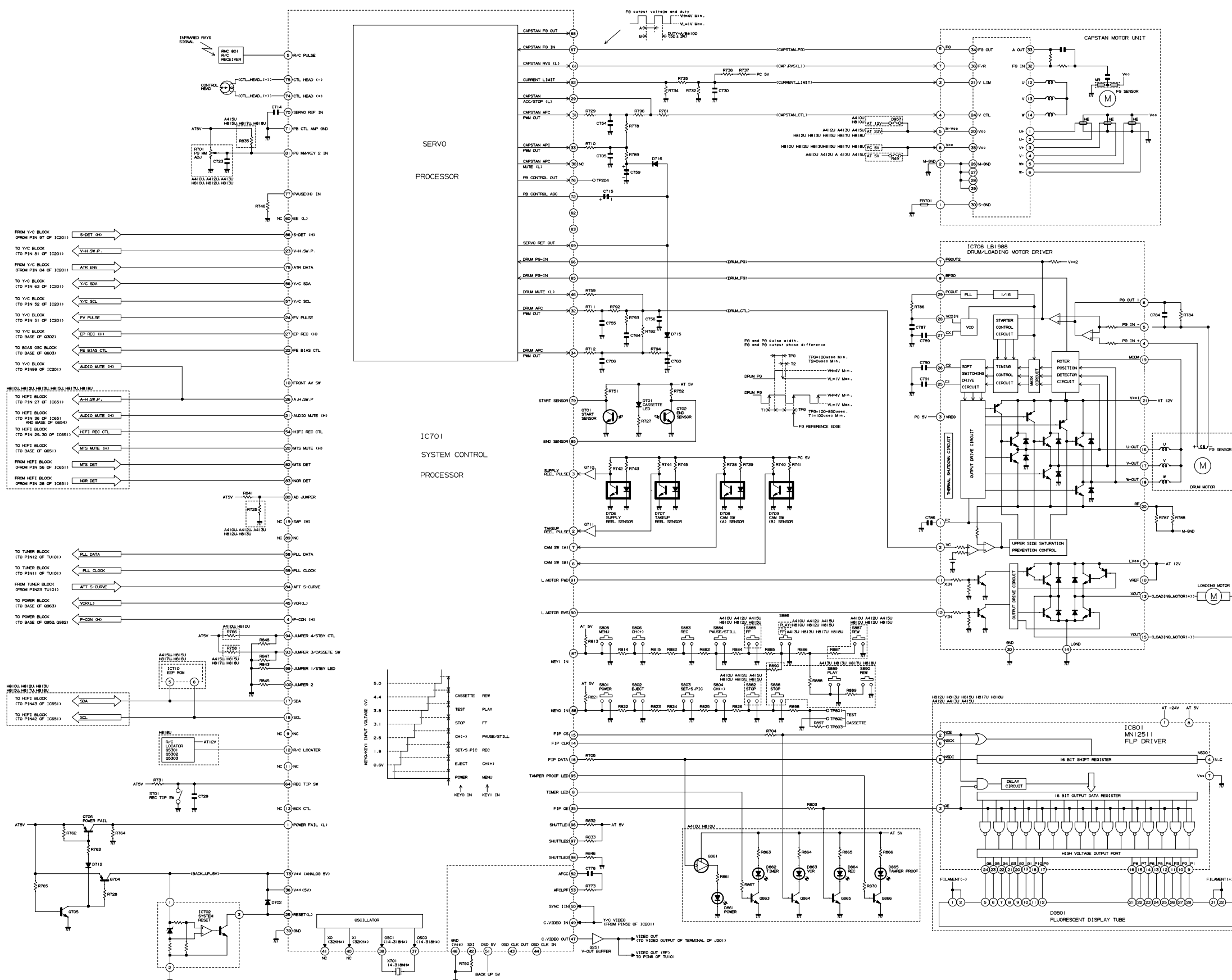


FLOW CHART NO.27



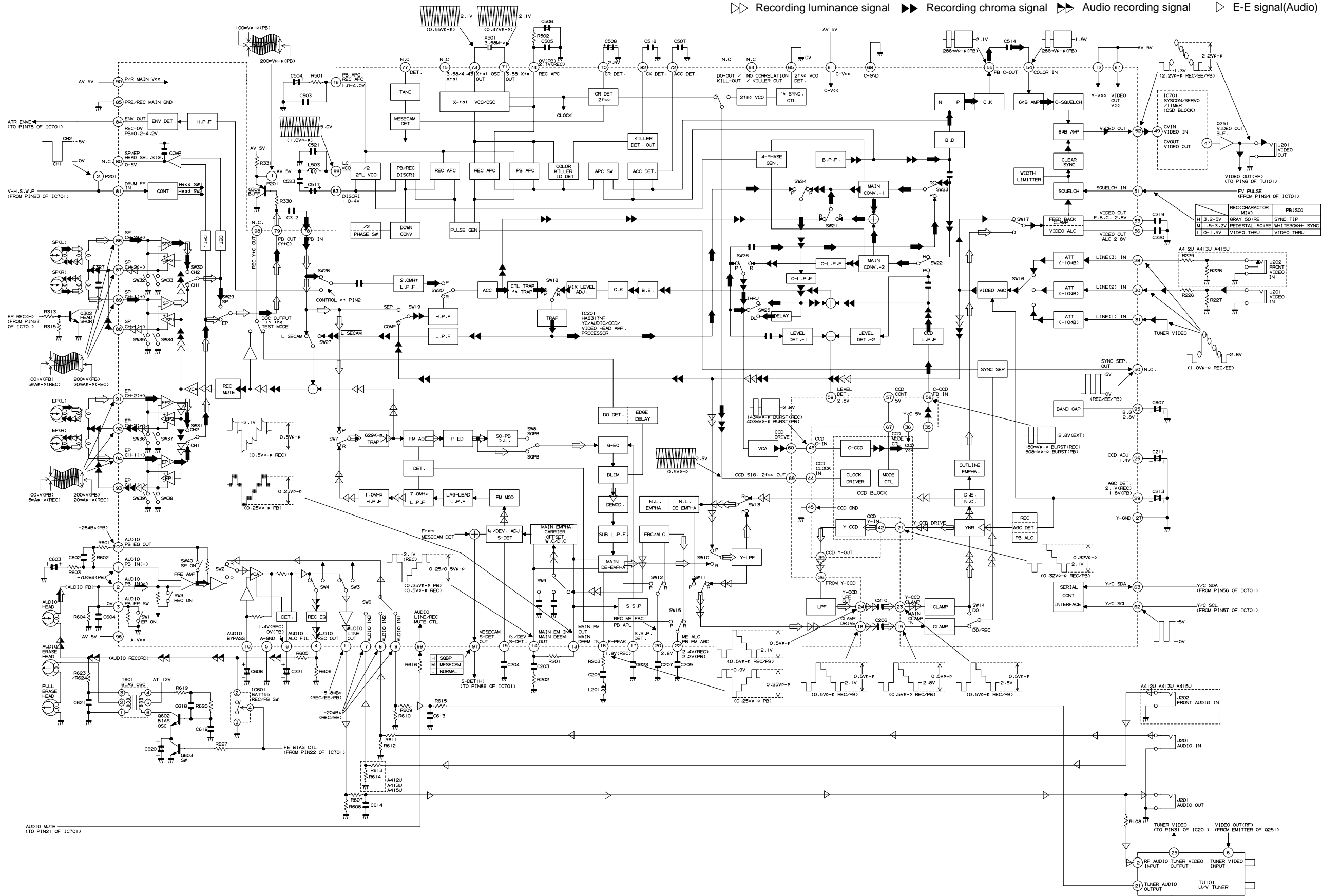
8. BLOCK DIAGRAM

SYSTEM SERVO BLOCK DIAGRAM

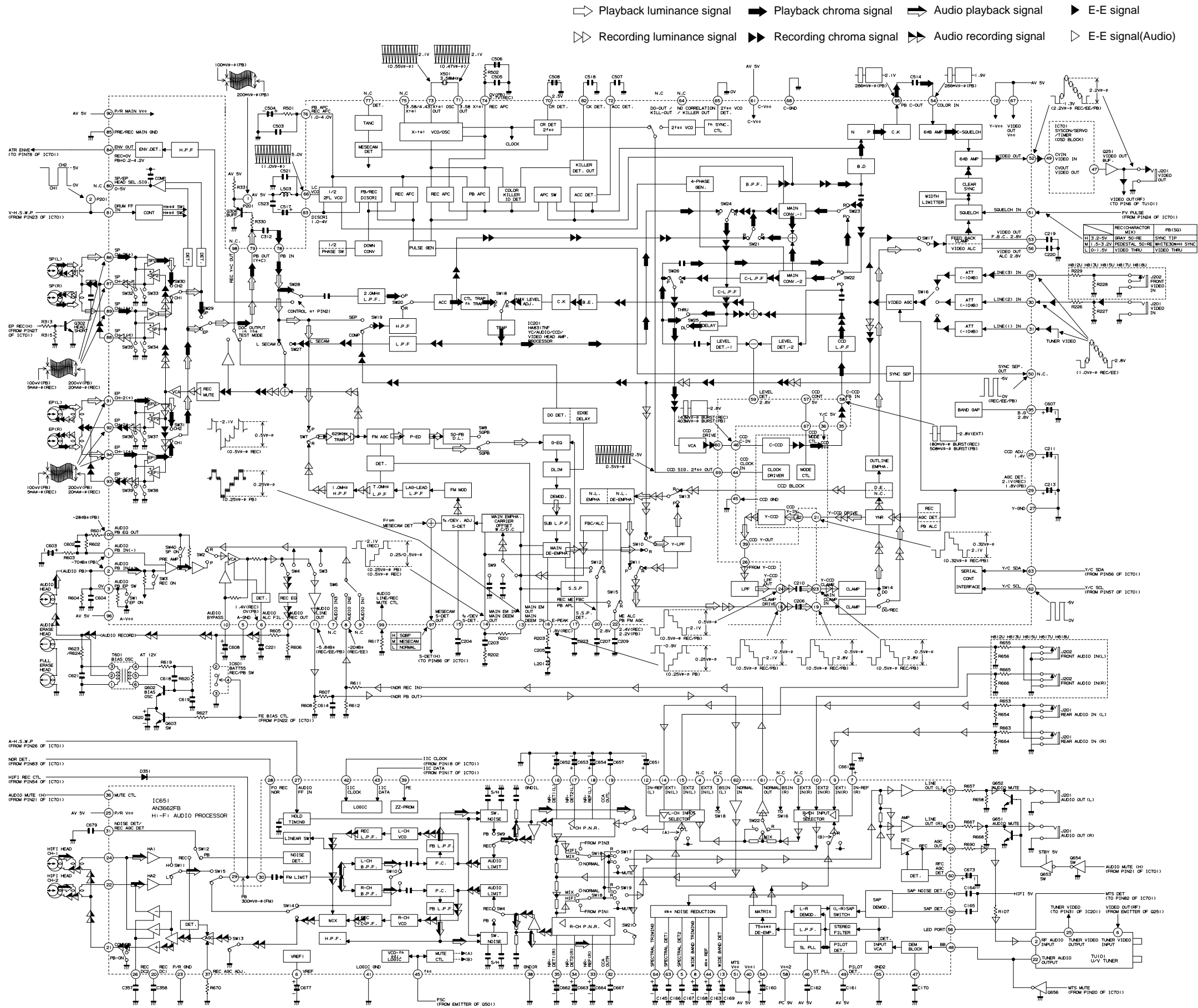


SIGNAL FLOW BLOCK DIAGRAM(VC-A412U/A413U)

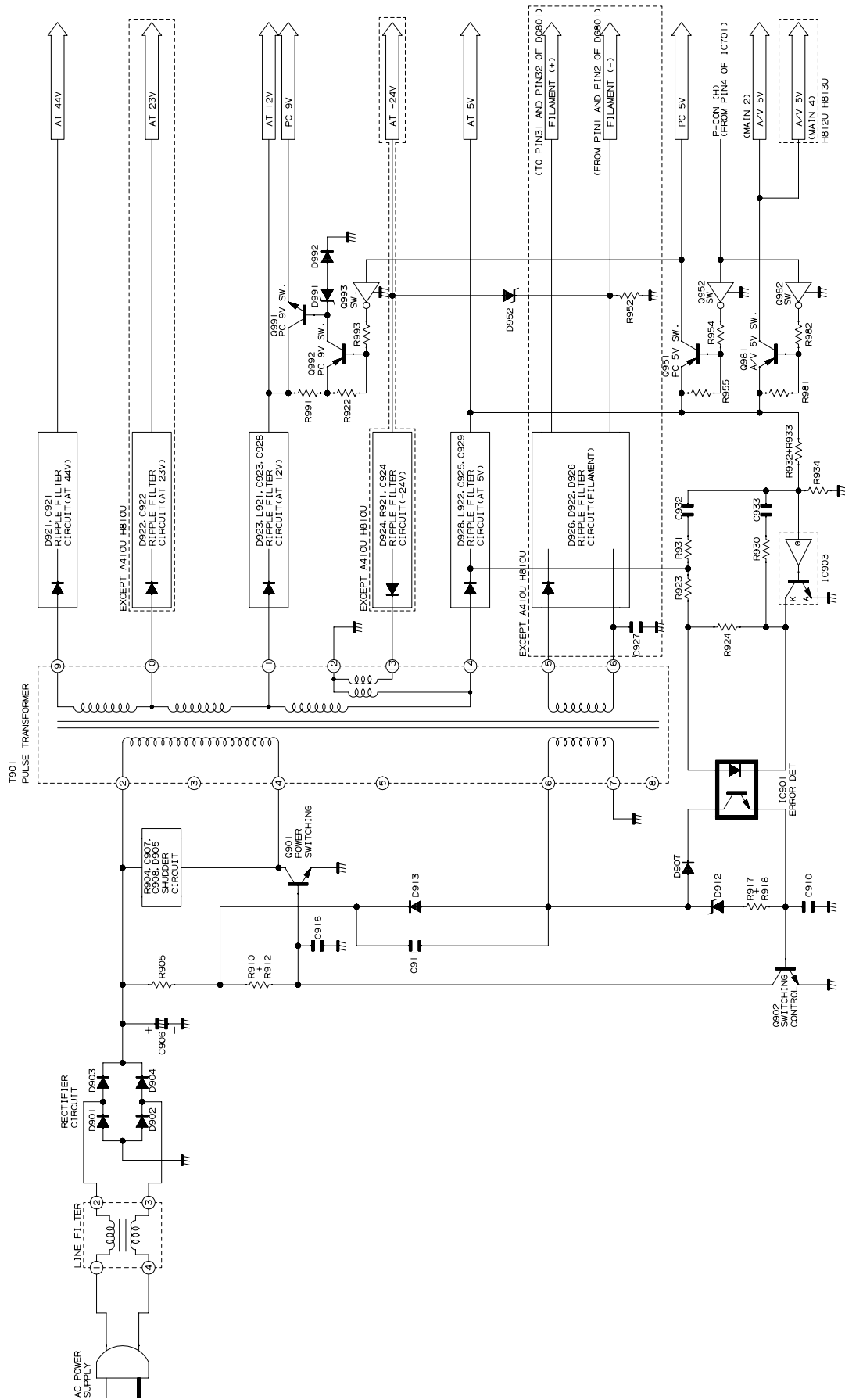
- ⇒ Playback luminance signal ➡ Playback chroma signal ➡ Audio playback signal ▶ E-E signal
- ▷▷ Recording luminance signal ▷▷ Recording chroma signal ▷▷ Audio recording signal ▷ E-E signal(Audio)



SIGNAL FLOW BLOCK DIAGRAM(VC-H812U/H813U)




POWER CIRCUIT BLOCK DIAGRAM



SCHEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE:

PARTS MARKED WITH " ⚠ " () ARE IMPORTANT FOR MAINTAINING THE SAFETY OF THE SET.

BE SURE TO REPLACE THESE PARTS WITH SPECIFIED ONES FOR MAINTAINING THE SAFETY AND PERFORMANCE OF THE SET.

AVIS DE SECURITE IMPORTANT:

LES PIECES MARQUEES " ⚠ " () SONT IMPORTANTES POUR MAINTENIR LA SECURITE DE L'APPAREIL.

NE REMPLACER CES PIECES QUE PAR DES PIECES DONT LE NUMERO EST SPECIFIE POUR MAINTENIR LA SECURITE ET PROTEGER LE BON FONCTIONNEMENT DE L'APPAREIL.

- The indicated voltages in the following diagram are measured with an SSVM, upon receiving color bars (400 Hz sound signal) in either the record mode or the play mode voltage is indicated as follows.

4.0 Record mode (SP)

(4.0) PB mode (SP)

4.0 LP mode

4.0 EP mode

NOTE:

- The unit of resistance "ohm" is omitted (K: 1000 ohms M: 1 Meg ohm).
- All resistors are 1/8 watt, unless otherwise noted.
- All capacitors μF , unless otherwise noted P: $\mu\mu F$.

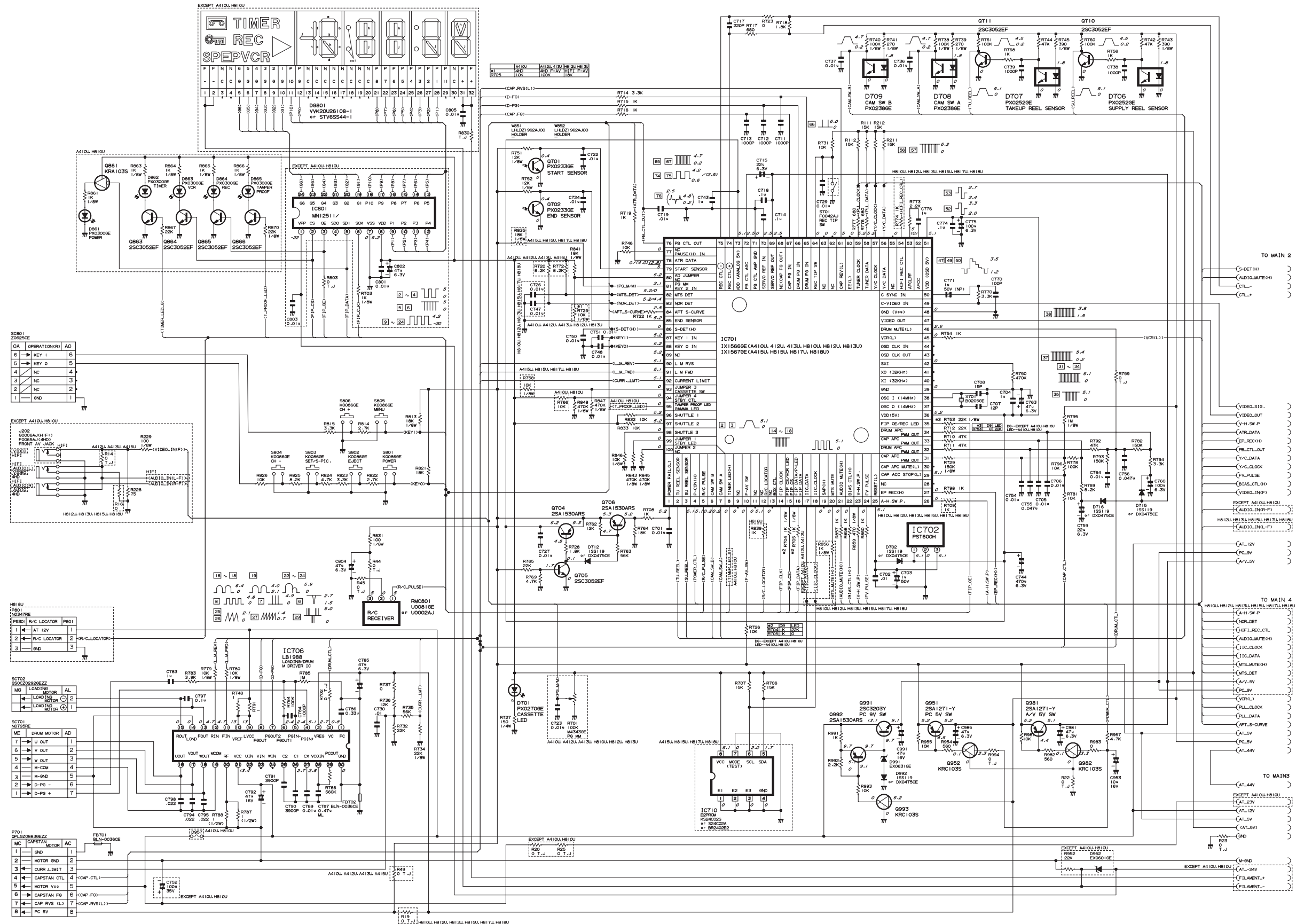
Voltages and waveform are measured as follows:

- DC voltages are measured with an SSVM placed between points indicated and chassis ground, with the supply voltage of 120V AC and all controls for normal positions.

This circuit diagram is a standard one, actual circuits printed may be subject to change for product improvement without prior notice.

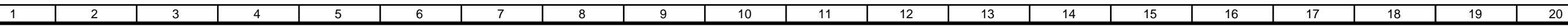
9. SCHEMATIC DIAGRAM AND PWB FOIL PATTERN

MAIN CIRCUIT(1)



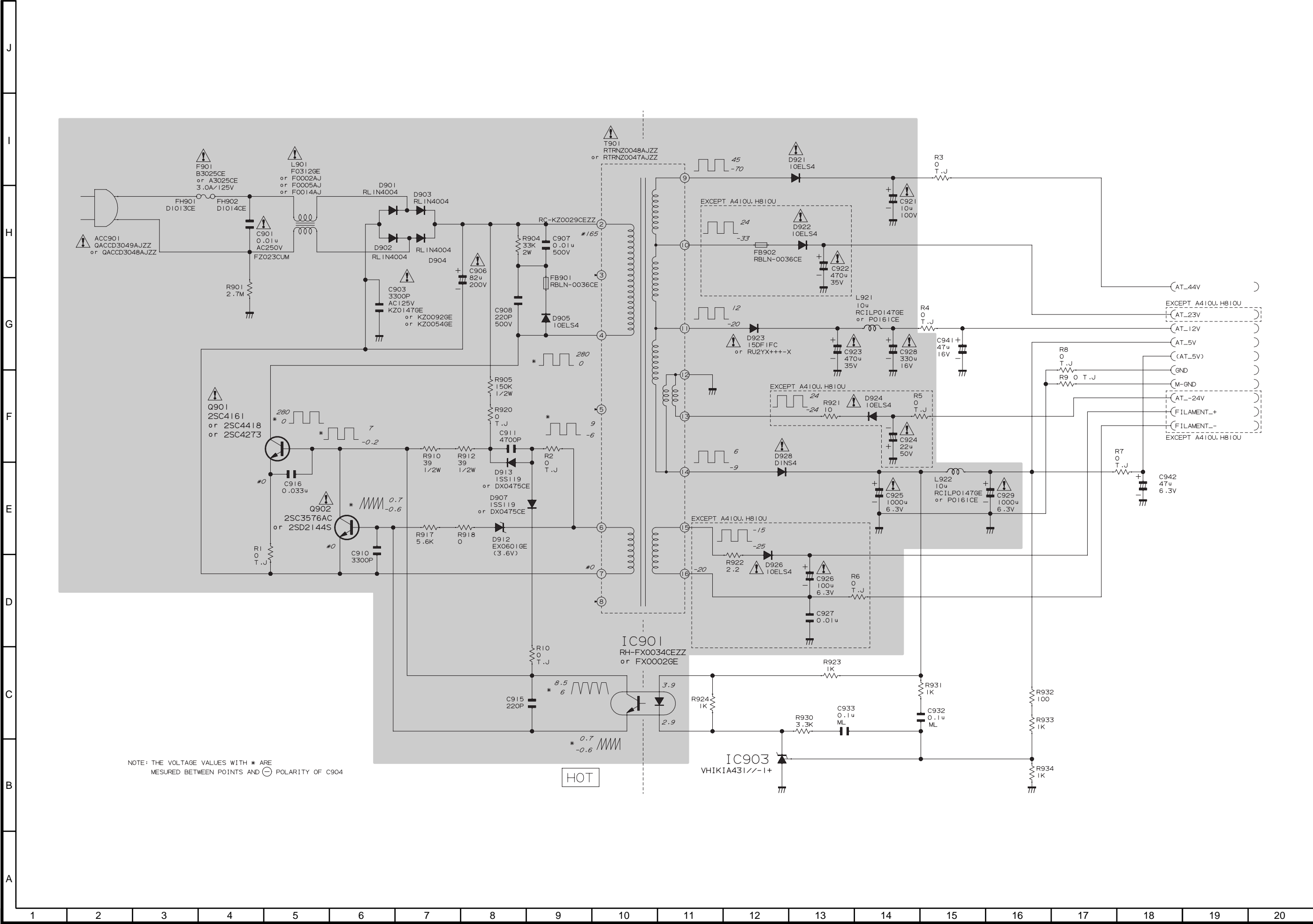
* VOLTAGE MEASUREMENT MODE
PB Parentheses ()
REC Without Parentheses

A
B
C
D
E
F
G
H
I
J



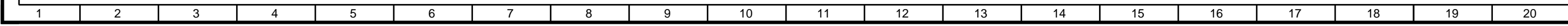
60~61

MAIN CIRCUIT(3)



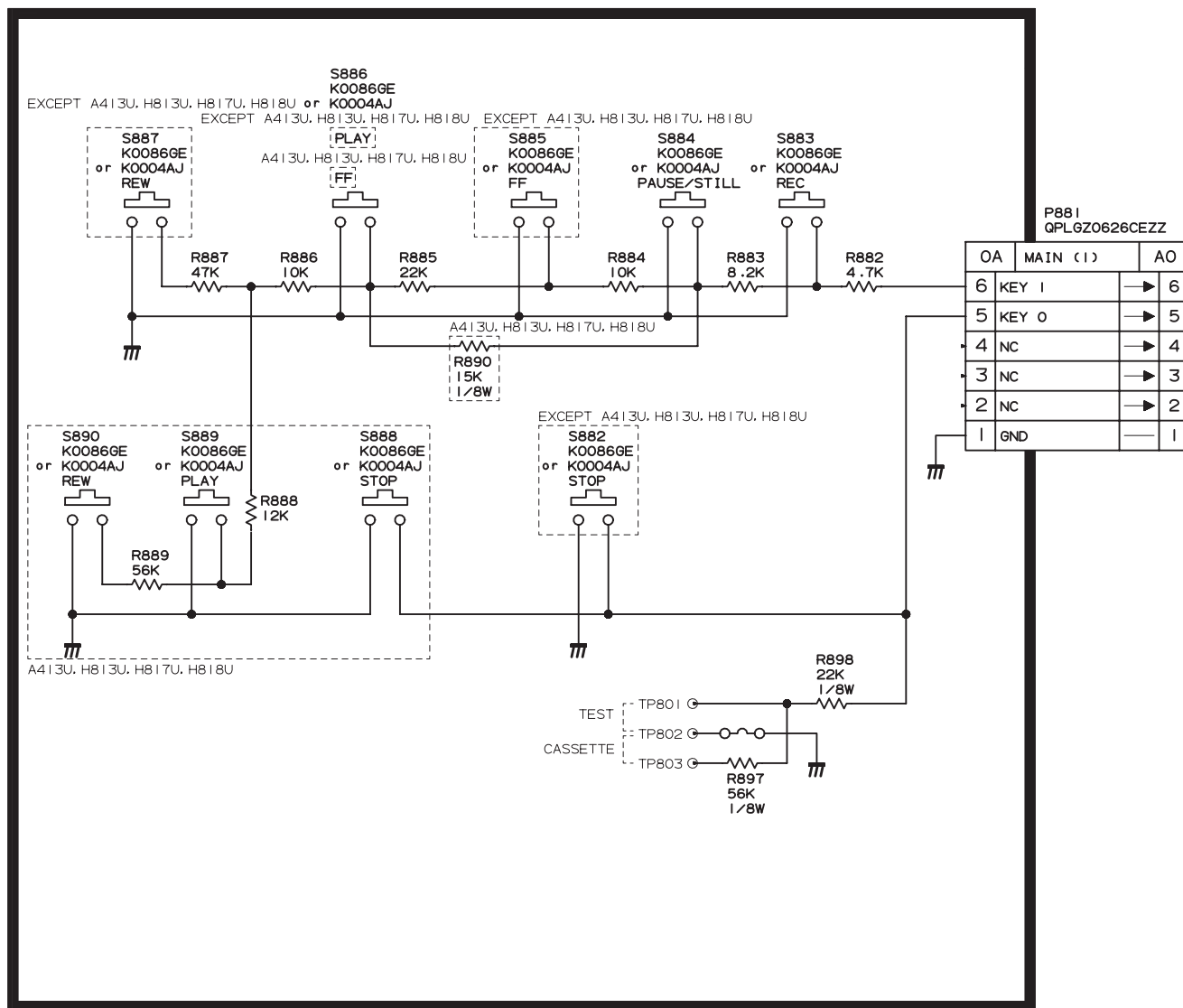
* VOLTAGE MEASUREMENT MODE
PB Parentheses ()
REC Without Parentheses

A
B
C
D
E
F
G
H
I
J

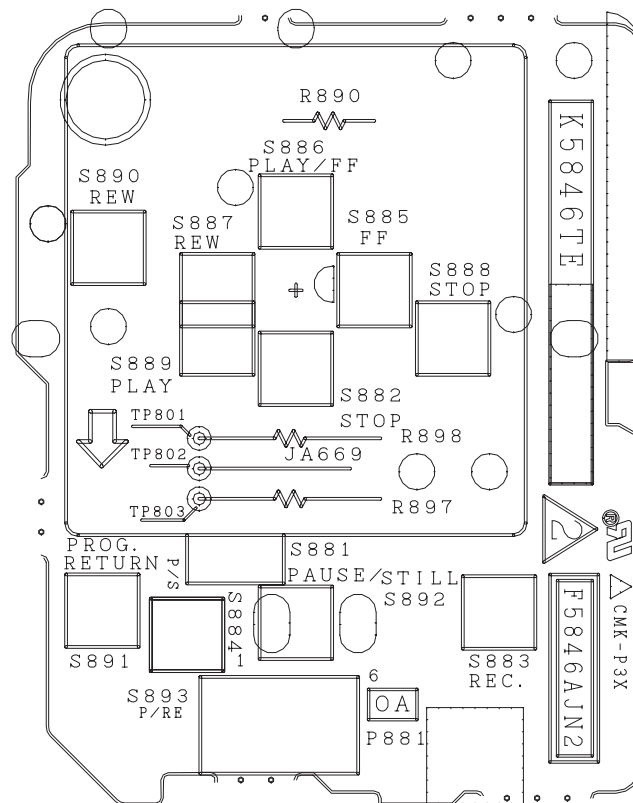


64~65

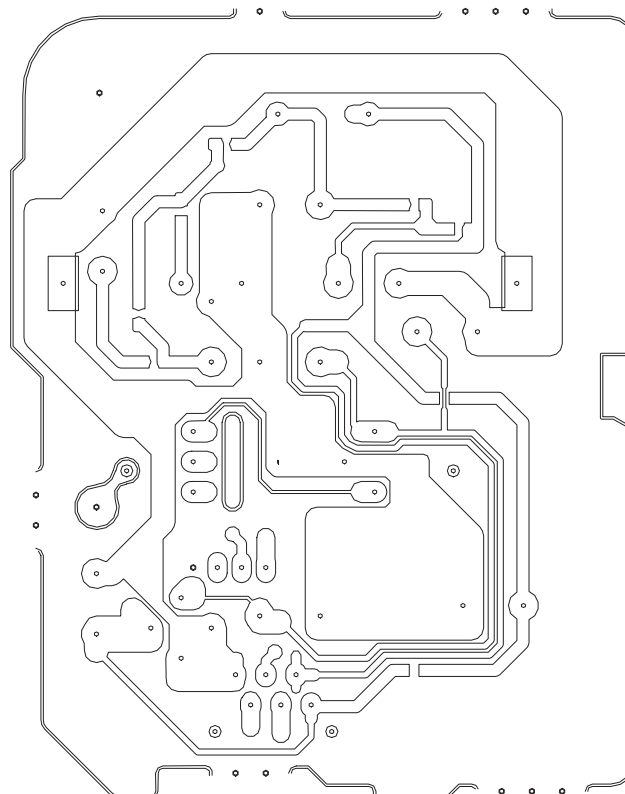
OPERATION CIRCUIT



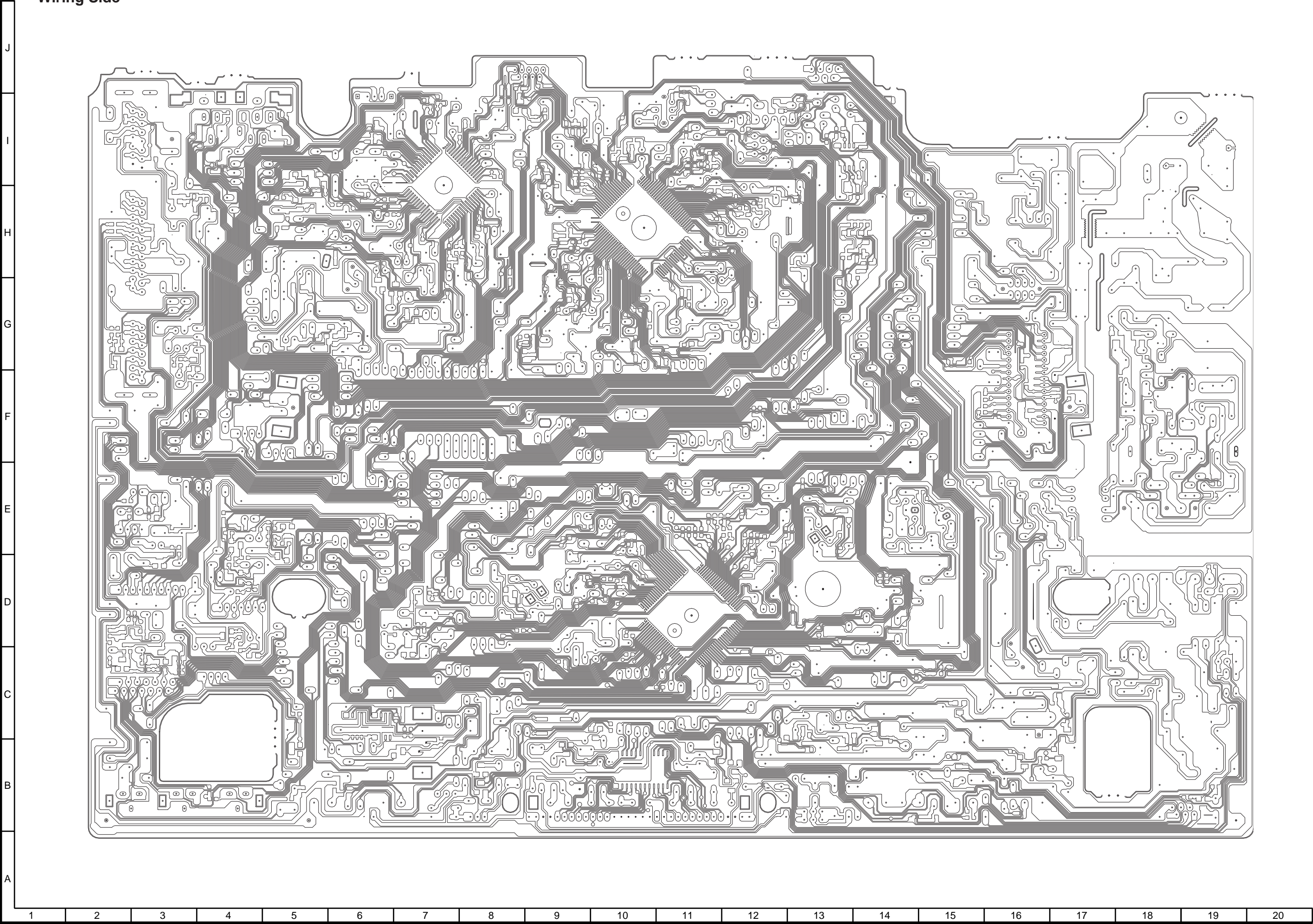
PWB FOIL PATTERN **OPERATION PWB** **Component Side**



Wiring Side



MAIN PWB
Wiring Side



- M E M O -

[illegible]

10. PARTS LIST PARTS REPLACEMENT

Many electrical and mechanical parts in video cassette recorder have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual; electrical components having such features are identified by " ⚠ " and shaded areas in the Replacement Parts Lists and Schematic Diagrams.

The use of a substitute replacement part which does not have the same safety characteristics as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

- | | |
|------------------------|-----------------------|
| 1. MODEL NUMBER | 2. REF. NO. |
| 3. PART NO. | 4. DESCRIPTION |

In **USA**: Contact your nearest SHARP Parts Distributor to order.
For location of SHARP Parts Distributor,
Please Call Toll-free;
1-800-BE-SHARP

HOW TO IDENTIFY CHIP TRANSISTORS AND DIODES BY ITS MARKING

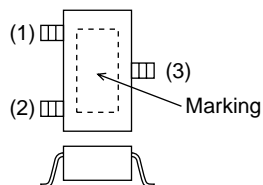


Fig. 1

- (1) Base/Input
(2) Emitter/Ground
(3) Collector/Output

Package	Marking	Parts No.
Fig. 1	TR/TS	VS2SA1530ARS1
Fig. 1	LE/LF	VS2SC3052EF-1
Fig. 1	PD	VSKRA104S//1
Fig. 1	NC	VSKRA103S//1

MARK★: SPARE PARTS-DELIVERY SECTION

Ref. No.	Part No.	★	Description	Code
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PRINTED WIRING BOARD ASSEMBLIES (NOT REPLACEMENT ITEM)

DUNTK5845TEV9	- Main Unit(VC-H812U)	—
DUNTK5845TEVB	- Main Unit(VC-H813U)	—
DUNTK5845TEVF	- Main Unit(VC-A412U)	—
DUNTK5845TEVH	- Main Unit(VC-A413U)	—
DUNTK5846TEV1	- Operation Unit (VC-A412U/H812U)	—
DUNTK5846TEV2	- Operation Unit (VC-A413U/H813U)	—

10. LISTE DES PIECES CHANGE DES PIECES

De nombreuses pièces électriques et mécaniques de magnétoscopes présentent des caractéristiques particulières de sécurité.

Ces caractéristiques ne sont pas toujours évidentes à l'inspection visuelle et la protection qu'elles assurent ne peut pas toujours être obtenue par des pièces de rechange étalonnées à un régime de tension, une puissance, etc. supérieurs. Les pièces de rechange qui présentent ces caractéristiques spéciales de sécurité, sont identifiées dans ce manuel: les pièces électriques qui présentent ces particularités, sont repérées par la marque " ⚠ " et sont hachurées dans les listes de pièces et dans les diagrammes schématiques.

La substitution d'une pièce de rechange par une autre qui ne présente pas les mêmes caractéristiques de sécurité que la pièce recommandée par l'usine et repérée dans ce manuel de service, peut provoquer une électrocution, un incendie ou tout autre sinistre.

"COMMENT COMMANDER LES PIECES DE RECHANGE"

Pour que votre commande soit rapidement et correctement remplie, veuillez fournir les renseignements suivants.

- | | |
|----------------------------|-----------------------|
| 1. NUMERO DU MODELE | 2. NO. DE REF |
| 3. NO. DE PIECE | 4. DESCRIPTION |

In **CANADA**: Contact Sharp Electronics of Canada Limited
Phone (416) 890-2100

★MARQUE: SECTION LIVRAISON DES PIECES DE RECHANGE

Ref. No.	Part No.	★	Description	Code
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DUNTK5845TEV9(VC-H812U)
DUNTK5845TEVB(VC-H813U)
DUNTK5845TEVF(VC-A412U)
DUNTK5845TEVH(VC-A413U)
MAIN UNIT

TUNER

TU101	RTUNQ0001AJZZ	V Tuner	BE
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INTEGRATED CIRCUITS

IC201	VHiHA8317NF-1	V HA118317NF, Y/C Audio Processor	AZ
IC601	VHiBA7755A/-1	V BA7755A, REC/PB Head SW	AE
IC651	VHiAN3662FB-1	V AN3662FBP, HiFi Audio Processor (VC-H812U/H813U)	AZ
IC701	RH-iX1566GEZZ	J IX1566GE	AY
IC702	VHiPST600H/-1	V PST600H	AE
IC706	VHiLB1988//1	V LB1988, Laoding/Drum M Driver IC	AQ
IC801	VHiMN12511/-1	V MN12511	AQ
IC903	VHiKiA431//1	V KIA431	AE

TRANSISTORS

Q251	VS2SA1530ARS1	V 2SA1530ARS	AC
Q302	VS2SD1306-E1E	V 2SD1306-E	AD
Q306	VS2SA1530ARS1	V 2SA1530ARS	AC
Q501	VS2SC3052EF-1	V 2SC3052EF (VC-H812U/H813U)	AC
Q602	VS2SD1859TV-1	V 2SD1859TV	AD
	or		
Q602	VS2SC3939SQR-1	V SC3939SQR	AC
Q603	VS2SC3052EF-1	V 2SC3052EF	AC

VC-A412U/A413U
VC-H812U/H813U

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
Q651	VS2SD1306-E1E	V	2SD1306-E (VC-H812U/H813U)	AD	D992	VHD1SS119//-1	V	1SS119	AB
Q652	VS2SD1306-E1E	V	2SD1306-E (VC-H812U/H813U)	AD	D992	RH-DX0475CEZZ	V	DX0475CE	AB
Q653	VSKRA104S//-1	V	KRA104S (VC-H812U/H813U)	AA	⚠ IC901	RH-FX0034CEZZ	V	PC817	AE
Q654	VSKRC103S//-1	V	KRC103S (VC-H812U/H813U)	AA	⚠ IC901	RH-FX0002GEZZ	J	PC817	AD
Q656	VSKRC103S//-1	V	KRC103S (VC-H812U/H813U)	AA	Q701	RH-PX0233GEZZ	J	LED, Start Sensor	AD
Q704	VS2SA1530ARS1	V	2SA1530ARS	AC	Q702	RH-PX0233GEZZ	J	LED, End Sensor	AD
Q705	VS2SC3052EF-1	V	2SC3052EF	AC	PACKAGED CIRCUITS				
Q706	VS2SA1530ARS1	V	2SA1530ARS	AC	⚠ R901	RR-DZ0047CEZZ	V	2.7M Resistor	AD
Q710	VS2SC3052EF-1	V	2SC3052EF	AC	X501	RCRSB0265GEZZ	J	Crystal, CRSB0265GE	AH
Q711	VS2SC3052EF-1	V	2SC3052EF	AC		or			
⚠ Q901	VS2SC4161//1E	V	2SC4161	AL	X501	RCRSB0204GEZZ	J	Crystal, CRSB0204GE	AG
⚠ Q902	VS2SC3576AC-1	V	2SC3576AC	AC	X701	RCRSB0205GEZZ	J	Crystal, CRSB0205GE	AM
Q951	VS2SA1271-Y-1	V	2SA1271-Y	AB	COILS				
Q952	VSKRC103S//-1	V	KRC103S	AA	L101	VP-CF101K0000	V	Peaking, 100μH	AB
Q963	VS2SA1530ARS1	V	2SA1530ARS	AC	L201	VP-XF820K0000	V	Peaking, 82μH	AB
Q981	VS2SA1271-Y-1	V	2SA1271-Y	AB	L301	VP-2K101K0000	V	Peaking, 100μH	AC
Q982	VSKRC103S//-1	V	KRC103S	AA		or			
Q991	VS2SC3203Y/-1	V	2SC3203Y	AB	L301	VP-MK101K0000	V	Peaking, 100μH	AB
Q992	VS2SA1530ARS1	V	2SA1530ARS	AC	L351	VP-2K101K0000	V	Peaking, 100μH (VC-H812U/H813U)	AC
Q993	VSKRC103S//-1	V	KRC103S	AA		or			
					L351	VP-MK101K0000	V	Peaking, 100μH (VC-H812U/H813U)	AB
DISPLAY					L503	VP-XF120K0000	V	Peaking, 12μH	AB
DG801	VVK20U26108-1	V	Display	AW	L602	VP-DF221K0000	V	Peaking, 220μH	AB
					⚠ L901	RCiLF0312GEZZ	J	Coil, CiLF0312GE	AE
DIODES AND LED'S						or			
D351	VHD1SS119//-1	V	1SS119(VC-H812U/H813U)AB		⚠ L901	RCiLF0014AJZZ	V	Coil, CiLF0014AJ	AG
	or					or			
D351	RH-DX0475CEZZ	V	DX0475CE (VC-H812U/H813U)	AB	⚠ L901	RCiLF0002AJZZ	V	Coil, CiLF0002AJ	AK
D701	RH-PX0270GEZZ	J	LED, Cassette LED	AC	⚠ L901	RCiLF0005AJZZ	V	Coil, CiLF0005AJ	AE
D702	VHD1SS119//-1	V	1SS119	AB	⚠ L921	RCiLP0147GEZZ	J	Coil, CiLP0147GE	AC
	or					or			
D702	RH-DX0475CEZZ	V	DX0475CE	AB	⚠ L921	RCiLP0161CEZZ	V	Coil, CiLP0161CE	AD
D706	RH-PX0252GEZZ	J	LED, Supply Reel Sensor	AF	⚠ L922	RCiLP0147GEZZ	J	Coil, CiLP0147GE, 10μH	AC
D707	RH-PX0252GEZZ	J	LED, Takeup Reel Sensor	AF		or			
D708	RH-PX0238GEZZ	J	LED, Cam SW A	AF	⚠ L922	RCiLP0161CEZZ	V	Coil, CiLP0161CE, 10μH	AD
D709	RH-PX0238GEZZ	J	LED, Cam SW B	AF	TRANSFORMERS				
D712	VHD1SS119//-1	V	1SS119	AB	T601	RTRNH0098GEZZ	J	OSC. Transformer	AE
	or					or			
D712	RH-DX0475CEZZ	V	DX0475CE	AB	T601	RTRNH0086GEZZ	J	OSC. Transformer	AD
D715	VHD1SS119//-1	V	1SS119	AB	⚠ T901	RTRNZ0048AJZZ	V	Transformer	AQ
	or					or			
D715	RH-DX0475CEZZ	V	DX0475CE	AB	⚠ T901	RTRNZ0047AJZZ	V	Transformer	AV
D716	VHD1SS119//-1	V	1SS119	AB	VARIABLE RESISTOR				
	or								
D716	RH-DX0475CEZZ	V	DX0475CE	AB	R701	RVR-M4343GEZZ	J	Variable Resistor, 100k, PG MM	AB
⚠ D901	VHDRL1N4004-1	V	RL1N4004	AD	CAPACITORS				
⚠ D902	VHDRL1N4004-1	V	RL1N4004	AD	C101	VCKYCY1HB221K	V	220p 50V Ceramic	AA
⚠ D903	VHDRL1N4004-1	V	RL1N4004	AD	C102	VCCCCY1HH101J	V	100p 50V Ceramic	AA
⚠ D904	VHDRL1N4004-1	V	RL1N4004	AD	C103	VCEA9M0JW107M	V	100 6.3V Electrolytic	AB
⚠ D905	VHD10ELS4//-1	V	10ELS4	AD	C105	VCEA0A0JW108M	V	1000 6.3V Electrolytic	AC
⚠ D907	VHD1SS119//-1	V	1SS119	AB	C106	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
	or				C142	VCEA9M0JW107M	V	100 6.3V Electrolytic (VC-H812U/H813U)	AB
⚠ D907	RH-DX0475CEZZ	V	DX0475CE	AB	C143	VCKYCY0JF105Z	V	1 6.3V Ceramic (VC-H812U/H813U)	AB
⚠ D912	RH-EX0601GEZZ	J	Zener Diode	AA	C145	VCEA9M1HW335M	V	3.3 50V Electrolytic (VC-H812U/H813U)	AB
⚠ D913	VHD1SS119//-1	V	1SS119	AB	C148	VCKYCY1HF103Z	V	0.01 50V Ceramic (VC-H812U/H813U)	AA
	or				C160	VCEA9M1HW225M	V	2.2 50V Electrolytic (VC-H812U/H813U)	AB
⚠ D913	RH-DX0475CEZZ	V	DX0475CE	AB	C161	VCKYCY1CB104K	V	0.1 16V Ceramic (VC-H812U/H813U)	AB
⚠ D921	VHD10ELS4//-1	V	10ELS4	AD	C162	VCKYCY1CB473K	V	0.047 16V Ceramic (VC-H812U/H813U)	AA
⚠ D922	VHD10ELS4//-1	V	10ELS4	AD					
⚠ D923	VHD15DF1FC/1E	V	15DF1FC	AD					
	or								
⚠ D923	VHDRU2YX+++X	V	RU2YXLF	AD					
⚠ D924	VHD10ELS4//-1	V	10ELS4	AD					
⚠ D926	VHD10ELS4//-1	V	10ELS4	AD					
⚠ D928	VHDD1NS4///-1	V	D1NS4	AE					
D951	RH-EX0677GEZZ	J	Zener Diode	AB					
D952	RH-EX0601GEZZ	J	Zener Diode	AA					
D991	RH-EX0631GEZZ	J	Zener Diode	AA					

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
C163	VCEA9M1HW474M	V 0.47	50V Electrolytic (VC-H812U/H813U)	AB	C501	VCEA9M0JW107M	V 100	6.3V Electrolytic	AB
C164	VCKYCY1CB104K	V 0.1	16V Ceramic (VC-H812U/H813U)	AB	C502	VCKYCY0JF105Z	V 1	6.3V Ceramic	AB
C165	VCKYCY1CB104K	V 0.1	16V Ceramic (VC-H812U/H813U)	AB	C503	VCKYCY1HB472K	V 4700p	50V Ceramic	AA
C166	VCKYCY1CB273K	V 0.027	16V Ceramic (VC-H812U/H813U)	AA	C504	VCEA9M1HW225M	V 2.2	50V Electrolytic	AB
C167	VCKYCY1CB104K	V 0.1	16V Ceramic (VC-H812U/H813U)	AB	C505	VCKYCY1EB223K	V 0.022	25V Ceramic	AA
C168	VCEA9M1CW106M	V 10	16V Electrolytic (VC-H812U/H813U)	AB	C506	VCEA9M1HW474M	V 0.47	50V Electrolytic	AB
C169	VCEA9M1HW105M	V 1	50V Electrolytic (VC-H812U/H813U)	AB	C507	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA
C170	VCFYFA1HA124J	V 0.12	50V M.Polypro (VC-H812U/H813U)	AC	C508	VCEA9M1HW475M	V 4.7	50V Electrolytic	AB
C201	VCEA9M0JW107M	V 100	6.3V Electrolytic	AB	C509	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA
C202	VCKYCY0JF105Z	V 1	6.3V Ceramic	AB	C512	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA
C203	VCCCCY1HH151J	V 150p	50V Ceramic	AA	C513	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA
C204	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA	C514	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA
C205	VCCCCY1HH470J	V 47p	50V Ceramic	AA	C515	VCKYCY1HB331K	V 330p	50V Ceramic	AA
C206	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA	C517	VCEA9M1HW335M	V 3.3	50V Electrolytic	AB
C207	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA	C518	VCKYCY1HF333Z	V 0.033	50V Ceramic	AA
C208	VCEA9M1CW106M	V 10	16V Electrolytic	AB	C521	VCCCCY1HH5R0C	V 5p	50V Ceramic	AA
C209	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA	C523	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA
C210	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA	C524	VCKYCY1HF103Z	V 0.01	50V Ceramic (VC-H812U/H813U)	AA
C211	VCEA9M1HW335M	V 3.3	50V Electrolytic	AB	C601	VCEA9M0JW107M	V 100	6.3V Electrolytic	AB
C212	VCEA9M1CW106M	V 10	16V Electrolytic	AB	C602	VCKYCY1EB103K	V 0.01	25V Ceramic	AA
C213	VCEA9M1HW225M	V 2.2	50V Electrolytic	AB	C603	VCEA9M1CW106M	V 10	16V Electrolytic	AB
C214	VCKYCY0JF105Z	V 1	6.3V Ceramic	AB	C604	VCKYCY1HB821K	V 820p	50V Ceramic	AA
C215	VCKYCY0JF105Z	V 1	6.3V Ceramic	AB	C605	VCEA9M1CW106M	V 10	16V Electrolytic	AB
C216	VCKYCY0JF105Z	V 1	6.3V Ceramic	AB	C606	VCEA9M1HW475M	V 4.7	50V Electrolytic	AB
C217	VCEA9M0JW107M	V 100	6.3V Electrolytic	AB	C607	VCEA9M1HW475M	V 4.7	50V Electrolytic	AB
C218	VCKYCY0JF105Z	V 1	6.3V Ceramic	AB	C608	VCEA9M0JW226M	V 22	6.3V Electrolytic	AB
C219	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA	C609	VCEA9M1HW475M	V 4.7	50V Electrolytic	AB
C220	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA	C610	VCKYCY1CF104Z	V 0.1	16V Ceramic (VC-A412U/A413U)	AA
C221	VCEA9M1CW106M	V 10	16V Electrolytic	AB	C611	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA
C223	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA	C612	VCKYCY1CF104Z	V 0.1	16V Ceramic (VC-A412U/A413U)	AA
C226	VCEA9M0JW107M	V 100	6.3V Electrolytic	AB	C613	VCKYCY1EB183K	V 0.018	25V Ceramic (VC-A412U/A413U)	AA
C227	VCKYCY0JF105Z	V 1	6.3V Ceramic	AB	C614	VCKYCY1HB222K	V 2200p	50V Ceramic	AA
C228	VCEA9M0JW107M	V 100	6.3V Electrolytic	AB	C617	VCEA9M1CW476M	V 47	16V Electrolytic	AB
C251	VCEA9M1CW476M	V 47	16V Electrolytic	AB	C618	VCKYCY1EB103K	V 0.01	25V Ceramic	AA
C252	VCEA0A0JW337M	V 330	6.3V Electrolytic	AC	C619	VCKYCY1EB103K	V 0.01	25V Ceramic	AA
C254	VCCCCY1HH330J	V 33p	50V Ceramic	AA	C620	VCEA9M1CW106M	V 10	16V Electrolytic	AB
C256	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA	C621	VQCPYA2AA562J	V 5600p	100V	AC
C301	VCEA9M0JW107M	V 100	6.3V Electrolytic	AB	C622	VCKYCY1HB222K	V 2200p	50V Ceramic	AA
C302	VCKYCY0JF105Z	V 1	6.3V Ceramic	AB	C630	VCKYCY0JF105Z	V 1	6.3V Ceramic	AB
C303	VCKYCY1HB102K	V 1000p	50V Ceramic	AA	C651	VCEA9M1HW475M	V 4.7	50V Electrolytic (VC-H812U/H813U)	AB
C304	VCKYCY1HB102K	V 1000p	50V Ceramic	AA	C652	VCEA9M0JW336M	V 33	6.3V Electrolytic (VC-H812U/H813U)	AB
C305	VCKYCY1HB102K	V 1000p	50V Ceramic	AA	C653	VCEA9M1CW106M	V 10	16V Electrolytic (VC-H812U/H813U)	AB
C306	VCKYCY1HB102K	V 1000p	50V Ceramic	AA	C654	VCEA9M1CW106M	V 10	16V Electrolytic (VC-H812U/H813U)	AB
C307	VCKYCY1HB102K	V 1000p	50V Ceramic	AA	C655	VCEA9M1CW106M	V 10	16V Electrolytic (VC-H812U/H813U)	AB
C308	VCKYCY1HB102K	V 1000p	50V Ceramic	AA	C657	VCKYCY1EB153K	V 0.015	25V Ceramic (VC-H812U/H813U)	AA
C309	VCKYCY1HB102K	V 1000p	50V Ceramic	AA	C661	VCEA9M1HW475M	V 4.7	50V Electrolytic (VC-H812U/H813U)	AB
C310	VCKYCY1HB102K	V 1000p	50V Ceramic	AA	C662	VCEA9M0JW336M	V 33	6.3V Electrolytic (VC-H812U/H813U)	AB
C311	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA	C663	VCEA9M1CW106M	V 10	16V Electrolytic (VC-H812U/H813U)	AB
C312	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA	C664	VCEA9M1CW106M	V 10	16V Electrolytic (VC-H812U/H813U)	AB
C319	VCCCCY1HH100D	V 10p	50V Ceramic	AA	C665	VCEA9M1CW106M	V 10	16V Electrolytic (VC-H812U/H813U)	AB
C320	VCCCCY1HH100D	V 10p	50V Ceramic	AA	C667	VCKYCY1EB153K	V 0.015	25V Ceramic (VC-H812U/H813U)	AA
C327	VCKYCY1HB102K	V 1000p	50V Ceramic	AA	C670	VCEA9M0JW107M	V 100	6.3V Electrolytic (VC-H812U/H813U)	AB
C329	VCKYCY1HF103Z	V 0.01	50V Ceramic	AA	C671	VCEA9M1CW107M	V 100	16V Electrolytic (VC-H812U/H813U)	AB
C351	VCEA9M0JW107M	V 100	6.3V Electrolytic (VC-H812U/H813U)	AB	C672	VCKYCY1CF224Z	V 0.22	16V Ceramic (VC-H812U/H813U)	AA
C352	VCKYCY0JF105Z	V 1	6.3V Ceramic (VC-H812U/H813U)	AB	C673	VCEA9M0JW226M	V 22	6.3V Electrolytic (VC-H812U/H813U)	AB
C353	VCKYCY1HF103Z	V 0.01	50V Ceramic (VC-H812U/H813U)	AA					
C354	VCKYCY1HF103Z	V 0.01	50V Ceramic (VC-H812U/H813U)	AA					
C356	VCCCCY1HH101J	V 100p	50V Ceramic (VC-H812U/H813U)	AA					
C357	VCKYCY1CB104K	V 0.1	16V Ceramic (VC-H812U/H813U)	AB					
C358	VCKYCY1CB104K	V 0.1	16V Ceramic (VC-H812U/H813U)	AB					

VC-A412U/A413U
VC-H812U/H813U

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
C674	VCKYCY1CF224Z	V	0.22 16V Ceramic (VC-H812U/H813U)	AA	C791	VCKYCY1HB392K	V	3900p 50V Ceramic	AA
C675	VCKYCY1CF104Z	V	0.1 16V Ceramic (VC-H812U/H813U)	AA	C792	VCEA9M1CW476M	V	47 16V Electrolytic	AB
C677	VCEA9M1CW106M	V	10 16V Electrolytic (VC-H812U/H813U)	AB	C794	VCKYCY1EB223K	V	0.022 25V Ceramic	AA
C678	VCKYCY1HF103Z	V	0.01 50V Ceramic (VC-H812U/H813U)	AA	C795	VCKYCY1EB223K	V	0.022 25V Ceramic	AA
C679	VCKYCY1CF224Z	V	0.22 16V Ceramic (VC-H812U/H813U)	AA	C797	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C680	VCKYCY0JF105Z	V	1 6.3V Ceramic (VC-H812U/H813U)	AB	C798	VCKYCY1EB223K	V	0.022 25V Ceramic	AA
C681	VCKYCY1HF103Z	V	0.01 50V Ceramic (VC-H812U/H813U)	AA	C801	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C682	VCKYCY0JF105Z	V	1 6.3V Ceramic (VC-H812U/H813U)	AB	C802	VCEA9M0JW476M	V	47 6.3V Electrolytic	AB
C684	VCCCCY1HH560J	V	56p 50V Ceramic (VC-H812U/H813U)	AA	C803	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C685	VCCCCY1HH560J	V	56p 50V Ceramic (VC-H812U/H813U)	AA	C804	VCEA9M0JW476M	V	47 6.3V Electrolytic	AB
C701	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA	C805	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C702	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA	C806	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C703	VCEA9M1HW105M	V	1 50V Electrolytic	AB	⚠ C901	RC-FZ023CUMZZ	V	0.01 AC250V M.Polypro	AF
C704	VCKYCY0JF105Z	V	1 6.3V Ceramic	AB		or			
C705	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA	⚠ C901	RC-QZ001DGEZZ	J	0.01 AC250V Mylar	AF
C706	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA	⚠ C903	RC-KZ0147GEZZ	J	3300p AC125V Ceramic	AC
C707	VCCCCY1HH120J	V	12p 50V Ceramic	AA		or			
C708	VCCCCY1HH150J	V	15p 50V Ceramic	AA	⚠ C903	RC-KZ0092GEZZ	J	3300p AC125V Ceramic	AC
C711	VCKYCY1HB102K	V	1000p 50V Ceramic	AA	⚠ C906	RC-EZ0238CEZZ	V	82 200V Electrolytic	AE
C712	VCKYCY1HB102K	V	1000p 50V Ceramic	AA	⚠ C907	RC-KZ0029CEZZ	V	0.01 500V Ceramic	AC
C713	VCKYCY1HB102K	V	1000p 50V Ceramic	AA	⚠ C908	VCKYPA2HB221K	V	220p 500V Ceramic	AA
C714	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA	⚠ C910	VCKYCY1HB332K	V	3300p 50V Ceramic	AA
C715	VCEA9M0JW226M	V	22 6.3V Electrolytic	AB	⚠ C911	VCQYTA1HM472K	V	4700p 50V Mylar	AB
C717	VCKYCY1HB221K	V	220p 50V Ceramic	AA	⚠ C915	VCKYCY1HB221K	V	220p 50V Ceramic	AA
C718	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA	⚠ C916	VCKYCY1HF333Z	V	0.033 50V Ceramic	AA
C719	VCKYCY1EB103K	V	0.01 25V Ceramic	AA	⚠ C921	VCEA0A2AW106M	V	10 100V Electrolytic	AC
C722	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA	⚠ C922	VCEA0A1VW477M	V	470 35V Electrolytic	AB
C723	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA	⚠ C923	VCEA0A1VW477M	V	470 35V Electrolytic	AB
C724	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA	⚠ C924	VCEA0A1HW226M	V	22 50V Electrolytic	AB
C726	VCKYCY1HF103Z	V	0.01 50V Ceramic (VC-H812U/H813U)	AA	⚠ C925	VCEA0A0JW108M	V	1000 6.3V Electrolytic	AC
C727	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA	⚠ C926	VCEA0A0JW107M	V	100 6.3V Electrolytic	AB
C729	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA	⚠ C927	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C730	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA	⚠ C928	VCEA0A1CW337M	V	330 16V Electrolytic	AC
C736	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA	⚠ C929	VCEA0A0JW108M	V	1000 6.3V Electrolytic	AC
C737	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA	C932	VCQYTA1HM104J	V	0.1 50V Mylar	AA
C738	VCKYCY1HB102K	V	1000p 50V Ceramic	AA	C933	VCQYTA1HM104J	V	0.1 50V Mylar	AA
C739	VCKYCY1HB102K	V	1000p 50V Ceramic	AA	C941	VCEA9A1CW476M	V	47 16V Electrolytic	AB
C743	VCKYCY0JF105Z	V	1 6.3V Ceramic	AB	C942	VCEA9M0JW476M	V	47 6.3V Electrolytic	AB
C744	VCEA2A0JW477M	V	470 6.3V Electrolytic	AB	C951	VCKYCY1HF333Z	V	0.033 50V Ceramic	AA
C747	VCKYCY1HF103Z	V	0.01 50V Ceramic (VC-H812U/H813U)	AA	C953	VCEA9M1CW106M	V	10 16V Electrolytic	AB
C748	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA	C954	VCEA9M1HW105M	V	1 50V Electrolytic	AB
C750	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA	C971	VCEA9M0JW226M	V	22 6.3V Electrolytic	AB
C751	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA	C981	VCEA9M0JW476M	V	47 6.3V Electrolytic	AB
C752	VCEA2A1VW107M	V	100 35V Electrolytic	AC	C985	VCEA9M0JW476M	V	47 6.3V Electrolytic	AB
C754	VCKYCY1EB103K	V	0.01 25V Ceramic	AA	C991	VCEA9M1CW476M	V	47 16V Electrolytic	AB
C755	VCKYCY1HF473Z	V	0.047 50V Ceramic	AA	RESISTORS				
C756	VCKYCY1HF473Z	V	0.047 50V Ceramic	AA	RJ101	VRS-CY1JF000J	V	0 1/16W Metal Oxide	AA
C759	VCEA9M0JW226M	V	22 6.3V Electrolytic	AB	RJ102	VRS-CY1JF000J	V	0 1/16W Metal Oxide (VC-H812U/H813U)	AA
C760	VCEA9M0JW107M	V	100 6.3V Electrolytic	AB	RJ103	VRS-CY1JF000J	V	0 1/16W Metal Oxide (VC-A412U/A413U)	AA
C763	VCEA9M0JW476M	V	47 6.3V Electrolytic	AB	RJ301	VRS-CY1JF000J	V	0 1/16W Metal Oxide	AA
C764	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA	RJ302	VRS-CY1JF000J	V	0 1/16W Metal Oxide	AA
C770	VCCCCY1HH101J	V	100p 50V Ceramic	AA	RJ303	VRS-CY1JF000J	V	0 1/16W Metal Oxide	AA
C771	VCE9EM1HW105M	V	1 50V Electrolytic	AB	RJ304	VRS-CY1JF000J	V	0 1/16W Metal Oxide	AA
C774	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA	RJ305	VRS-CY1JF000J	V	0 1/16W Metal Oxide	AA
C775	VCEA9M0JW107M	V	100 6.3V Electrolytic	AB	RJ501	VRS-CY1JF000J	V	0 1/16W Metal Oxide	AA
C776	VCKYCY0JF105Z	V	1 6.3V Ceramic	AB	RJ502	VRS-CY1JF000J	V	0 1/16W Metal Oxide	AA
C783	VCKYCY0JF105Z	V	1 6.3V Ceramic	AB	R16	VRS-CY1JF000J	V	0 1/16W Metal Oxide (VC-H812U/H813U)	AA
C784	VCKYCY1HB102K	V	1000p 50V Ceramic	AA	R36	VRS-CY1JF000J	V	0 1/16W Metal Oxide (VC-H812U/H813U)	AA
C785	VCEA9M0JW476M	V	47 6.3V Electrolytic	AB	R101	VRS-CY1JF470J	V	47 1/16W Metal Oxide	AA
C786	VCKYCY1CF334Z	V	0.33 16V Ceramic	AA	R104	VRS-CY1JF000J	V	0 1/16W Metal Oxide	AA
C787	VCFYFA1HA474J	V	0.47 50V M.Polypro	AC	R105	VRS-CY1JF000J	V	0 1/16W Metal Oxide	AA
C789	VCKYCY1EB103K	V	0.01 25V Ceramic	AA	R107	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide (VC-H812U/H813U)	AA
C790	VCKYCY1HB392K	V	3900p 50V Ceramic	AA	R108	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide (VC-A412U/A413U)	AA
					R111	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
					R112	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
					R145	VRS-CY1JF000J	V	0 1/16W Metal Oxide (VC-H812U/H813U)	AA
					R201	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide	AA

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
R202	VRS-CY1JF182J	V	1.8k 1/16W Metal Oxide	AA	R654	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide (VC-H812U/H813U)	AA
R203	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide	AA	R655	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (VC-H812U/H813U)	AA
R207	VRS-CY1JF101J	V	100 1/16W Metal Oxide	AA	R656	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide (VC-H812U/H813U)	AA
R211	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA	R657	VRS-CY1JF101J	V	100 1/16W Metal Oxide (VC-H812U/H813U)	AA
R212	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA	R658	VRS-CY1JF223J	V	22k 1/16W Metal Oxide (VC-H812U/H813U)	AA
R225	VRS-CY1JF750J	V	75 1/16W Metal Oxide	AA	R659	VRD-RA2BE681J	V	680 1/8W Carbon (VC-H812U/H813U)	AA
R226	VRS-CY1JF101J	V	100 1/16W Metal Oxide	AA	R663	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (VC-H812U/H813U)	AA
R227	VRS-CY1JF750J	V	75 1/16W Metal Oxide	AA	R664	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide (VC-H812U/H813U)	AA
R228	VRS-CY1JF750J	V	75 1/16W Metal Oxide	AA	R665	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (VC-H812U/H813U)	AA
R229	VRD-RA2BE101J	V	100 1/8W Carbon	AB	R666	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide (VC-H812U/H813U)	AA
R252	VRD-RA2EE331J	V	330 1/4W Carbon	AA	R667	VRD-RA2BE101J	V	100 1/8W Carbon (VC-H812U/H813U)	AB
R253	VRS-CY1JF101J	V	100 1/16W Metal Oxide	AA	R668	VRS-CY1JF223J	V	22k 1/16W Metal Oxide (VC-H812U/H813U)	AA
R254	VRS-CY1JF101J	V	100 1/16W Metal Oxide	AA	R669	VRD-RA2BE681J	V	680 1/8W Carbon (VC-H812U/H813U)	AA
R256	VRS-CY1JF183J	V	18k 1/16W Metal Oxide	AA	R670	VRS-CY1JF273J	V	27k 1/16W Metal Oxide (VC-H812U/H813U)	AA
R301	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA	R671	VRS-CY1JF103J	V	10k 1/16W Metal Oxide (VC-H812U/H813U)	AA
R313	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA	R672	VRS-CY1JF151J	V	150 1/16W Metal Oxide (VC-H812U/H813U)	AA
R315	VRS-CY1JF152J	V	1.5k 1/16W Metal Oxide	AA	R673	VRS-CY1JF151J	V	150 1/16W Metal Oxide (VC-H812U/H813U)	AA
R330	VRS-CY1JF222J	V	2.2k 1/16W Metal Oxide	AA	R674	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (VC-H812U/H813U)	AA
R331	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA	R675	VRS-CY1JF183J	V	18k 1/16W Metal Oxide (VC-H812U/H813U)	AA
R351	VRS-CY1JF102J	V	1k 1/16W Metal Oxide (VC-H812U/H813U)	AA	R676	VRS-CY1JF102J	V	1k 1/16W Metal Oxide (VC-H812U/H813U)	AA
R501	VRS-CY1JF681J	V	680 1/16W Metal Oxide	AA	R677	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (VC-H812U/H813U)	AA
R502	VRS-CY1JF273J	V	27k 1/16W Metal Oxide	AA	R685	VRS-CY1JF102J	V	1k 1/16W Metal Oxide (VC-H812U/H813U)	AA
R505	VRS-CY1JF000J	V	0 1/16W Metal Oxide	AA	R686	VRS-CY1JF102J	V	1k 1/16W Metal Oxide (VC-H812U/H813U)	AA
R511	VRS-CY1JF272J	V	2.7k 1/16W Metal Oxide (VC-H812U/H813U)	AA	R690	VRS-CY1JF000J	V	0 1/16W Metal Oxide (VC-H812U/H813U)	AA
R512	VRS-CY1JF272J	V	2.7k 1/16W Metal Oxide (VC-H812U/H813U)	AA	R703	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R520	VRS-CY1JF154J	V	150k 1/16W Metal Oxide (VC-H812U/H813U)	AA	R704	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R521	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (VC-H812U/H813U)	AA	R705	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R601	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA	R706	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
R602	VRS-CY1JF274J	V	270k 1/16W Metal Oxide	AA	R707	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
R603	VRS-CY1JF221J	V	220 1/16W Metal Oxide	AA	R708	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R604	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA	R709	VRS-CY1JF102J	V	1k 1/16W Metal Oxide (VC-H812U/H813U)	AA
R605	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA	R710	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R606	VRS-CY1JF273J	V	27k 1/16W Metal Oxide	AA	R711	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R607	VRS-CY1JF561J	V	560 1/16W Metal Oxide	AA	R712	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R608	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA	R714	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA
R609	VRS-CY1JF333J	V	33k 1/16W Metal Oxide (VC-A412U/A413U)	AA	R715	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R610	VRS-CY1JF183J	V	18k 1/16W Metal Oxide (VC-A412U/A413U)	AA	R716	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R611	VRS-CY1JF153J	V	15k 1/16W Metal Oxide (VC-H812U/H813U)	AA	R717	VRS-CY1JF681J	V	680 1/16W Metal Oxide	AA
R611	VRS-CY1JF393J	V	39k 1/16W Metal Oxide (VC-A412U/A413U)	AA	R718	VRS-CY1JF182J	V	1.8k 1/16W Metal Oxide	AA
R612	VRS-CY1JF123J	V	12k 1/16W Metal Oxide (VC-A412U/A413U)	AA	R719	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R612	VRS-CY1JF823J	V	82k 1/16W Metal Oxide (VC-H812U/H813U)	AA	R720	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide (VC-A412U/A413U)	AA
R613	VRS-CY1JF393J	V	39k 1/16W Metal Oxide (VC-A412U/A413U)	AA	R722	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R614	VRS-CY1JF123J	V	12k 1/16W Metal Oxide (VC-A412U/A413U)	AA	R723	VRS-CY1JF000J	V	0 1/16W Metal Oxide	AA
R615	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide (VC-A412U/A413U)	AA	R725	VRD-RA2BE104J	V	100k 1/8W Carbon (VC-A412U/A413U)	AA
R616	VRS-CY1JF103J	V	10k 1/16W Metal Oxide (VC-A412U/A413U)	AA	R725	VRD-RA2BE183J	V	18k 1/8W Carbon (VC-H812U/H813U)	AA
R617	VRS-CY1JF103J	V	10k 1/16W Metal Oxide (VC-H812U/H813U)	AA	R726	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R618	VRS-CY1JF563J	V	56k 1/16W Metal Oxide	AA	R727	VRD-RA2EE151J	V	150 1/4W Carbon	AA
R619	VRS-CY1JF470J	V	47 1/16W Metal Oxide	AA					
R620	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA					
R621	VRD-RA2EE4R7J	V	4.7 1/4W Carbon	AA					
R623	VRS-CY1JF393J	V	39k 1/16W Metal Oxide	AA					
R624	VRS-CY1JF224J	V	220k 1/16W Metal Oxide	AA					
R626	VRS-CY1JF000J	V	0 1/16W Metal Oxide	AA					
R627	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide (VC-A412U/A413U)	AA					
R628	VRS-CY1JF000J	V	0 1/16W Metal Oxide (VC-A412U/A413U)	AA					
R653	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (VC-H812U/H813U)	AA					

VC-A412U/A413U
VC-H812U/H813U

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
R728	VRS-CY1JF182J	V	1.8k 1/16W Metal Oxide	AA	R846	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
R729	VRD-RA2BE154J	V	150k 1/8W Carbon	AA	R847	VRD-RA2BE474J	V	470k 1/8W Carbon	AA
R731	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA	R848	VRD-RA2BE474J	V	470k 1/8W Carbon	AA
R732	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA	R856	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R734	VRD-RA2BE223J	V	22k 1/8W Carbon	AA				(VC-H812U/H813U)	
R735	VRS-CY1JF563J	V	56k 1/16W Metal Oxide	AA	R857	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R736	VRS-CY1JF123J	V	12k 1/16W Metal Oxide	AA	R858	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R737	VRS-CY1JF000J	V	0 1/16W Metal Oxide	AA	R859	VRD-RA2BE471J	V	470 1/8W Carbon	AA
R738	VRD-RA2BE104J	V	100k 1/8W Carbon	AA	R860	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R739	VRD-RA2BE271J	V	270 1/8W Carbon	AA	⚠ R904	VRS-VV3DB333J	V	33k 2W Metal Oxide	AA
R740	VRD-RA2BE104J	V	100k 1/8W Carbon	AA	⚠ R905	VRD-RM2HD154J	V	150k 1/2W Carbon	AA
R741	VRD-RA2BE271J	V	270 1/8W Carbon	AA	⚠ R910	VRD-RM2HD390J	V	39 1/2W Carbon	AA
R742	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA	⚠ R912	VRD-RM2HD390J	V	39 1/2W Carbon	AA
R743	VRD-RA2BE391J	V	390 1/8W Carbon	AA	⚠ R917	VRS-CY1JF562J	V	5.6k 1/16W Metal Oxide	AA
R744	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA	⚠ R918	VRS-CY1JF000J	V	0 1/16W Metal Oxide	AA
R745	VRD-RA2BE391J	V	390 1/8W Carbon	AA	⚠ R921	VRS-CY1JF100J	V	10 1/16W Metal Oxide	AA
R746	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA	⚠ R922	VRS-CY1JF2R2J	V	2.2 1/16W Metal Oxide	AA
R748	VRS-CY1JF1R0J	V	1 1/16W Metal Oxide	AA	R923	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R750	VRS-CY1JF474J	V	470k 1/16W Metal Oxide	AA	R924	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R751	VRD-RA2BE123J	V	12k 1/8W Carbon	AA	R930	VRD-RA2BE332J	V	3.3k 1/8W Carbon	AA
R752	VRD-RA2BE123J	V	12k 1/8W Carbon	AA	R931	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R754	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA	R932	VRD-RA2BE101J	V	100 1/8W Carbon	AB
R756	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA	R933	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R760	VRS-CY1JF104J	V	100k 1/16W Metal Oxide	AA	R934	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R761	VRS-CY1JF104J	V	100k 1/16W Metal Oxide	AA	R951	VRD-RM2HD152J	V	1.5k 1/2W Carbon	AA
R762	VRS-CY1JF123J	V	12k 1/16W Metal Oxide	AA	R952	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R763	VRS-CY1JF563J	V	56k 1/16W Metal Oxide	AA	R954	VRS-CY1JF561J	V	560 1/16W Metal Oxide	AA
R764	VRS-CY1JF183J	V	18k 1/16W Metal Oxide	AA	R955	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R765	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA	R957	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R768	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA	R973	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R769	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA	R974	VRD-RA2BE222J	V	2.2k 1/8W Carbon	AA
R770	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA	R981	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R772	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA	R982	VRS-CY1JF561J	V	560 1/16W Metal Oxide	AA
			(VC-A412U/A413U)		R983	VRS-CY1JF000J	V	0 1/16W Metal Oxide	AA
R773	VRS-CY1JF222J	V	2.2k 1/16W Metal Oxide	AA	R991	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R774	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA	R992	VRS-CY1JF222J	V	2.2k 1/16W Metal Oxide	AA
			(VC-H812U/H813U)		R993	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R776	VRS-CY1JF681J	V	680 1/16W Metal Oxide	AA				BALUNES	
R777	VRS-CY1JF681J	V	680 1/16W Metal Oxide	AA	FB201	RBLN-0036CEZZ	V	Balun, BLN-0036CE	AB
R778	VRS-CY1JF104J	V	100k 1/16W Metal Oxide	AA	FB202	RBLN-0036CEZZ	V	Balun, BLN-0036CE	AB
R779	VRD-RA2BE103J	V	10k 1/8W Carbon	AA	FB203	RBLN-0036CEZZ	V	Balun, BLN-0036CE	AB
R780	VRD-RA2BE103J	V	10k 1/8W Carbon	AA	FB701	RBLN-0036CEZZ	V	Balun, BLN-0036CE	AB
R781	VRD-RA2BE103J	V	10k 1/8W Carbon	AA	FB702	RBLN-0036CEZZ	V	Balun, BLN-0036CE	AB
R782	VRS-CY1JF104J	V	100k 1/16W Metal Oxide	AA	⚠ FB901	RBLN-0036CEZZ	V	Balun, BLN-0036CE	AB
R783	VRS-CY1JF392J	V	3.9k 1/16W Metal Oxide	AA	⚠ FB902	RBLN-0036CEZZ	V	Balun, BLN-0036CE	AB
R784	VRS-CY1JF104J	V	100k 1/16W Metal Oxide	AA				SWITCHES	
R785	VRS-CY1JF105J	V	1M 1/16W Metal Oxide	AA	S101	QSW-S0004AJZZ	V	Switch, RF Conv. SW	AF
R786	VRS-CY1JF564J	V	560k 1/16W Metal Oxide	AA	S701	QSW-F0042AJZZ	V	Switch, REC Tip SW	AG
R787	VRD-RM2HD1R0J	V	1 1/2W Carbon	AA	S801	QSW-K0086GEZZ	J	Switch, Power	AC
R788	VRD-RM2HD1R0J	V	1 1/2W Carbon	AA	S802	QSW-K0086GEZZ	J	Switch, Eject	AC
R789	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA	S803	QSW-K0086GEZZ	J	Switch, Set/S-Pic.	AC
R791	VRS-CY1JF1R0J	V	1 1/16W Metal Oxide	AA	S804	QSW-K0086GEZZ	J	Switch, CH -	AC
R792	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA	S805	QSW-K0086GEZZ	J	Switch, Menu	AC
R793	VRS-CY1JF154J	V	150k 1/16W Metal Oxide	AA	S806	QSW-K0086GEZZ	J	Switch, CH +	AC
R794	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA				MISCELLANEOUS PARTS	
R795	VRD-RA2BE105J	V	1M 1/8W Carbon	AA	QCNW-0307AJZZ	V	Connecting Cord	AD	
R796	VRD-RA2BE103J	V	10k 1/8W Carbon	AA	PSLDM4575AJFW	V	H/A Shield Top	AD	
R798	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA	⚠ ACC901	QACCD3049AJZZ	V	AC Cord	AN
R813	VRD-RA2BE183J	V	18k 1/8W Carbon	AA		or			
R814	VRS-CY1JF272J	V	2.7k 1/16W Metal Oxide	AA	⚠ ACC901	QACCD3048AJZZ	V	AC Cord	AN
R815	VRD-RA2BE332J	V	3.3k 1/8W Carbon	AA	⚠ FH901	QFSDH1013CEZZ	V	Fuse Holder	AC
R821	VRS-CY1JF183J	V	18k 1/16W Metal Oxide	AA	⚠ FH902	QFSDH1014CEZZ	V	Fuse Holder	AC
R822	VRS-CY1JF272J	V	2.7k 1/16W Metal Oxide	AA	⚠ F901	QFS-B3025CEZZ	V	Fuse, 3.0A 125V	AD
R823	VRD-RA2BE332J	V	3.3k 1/8W Carbon	AA		or			
R824	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA	⚠ F901	QFS-A3025CEZZ	V	Fuse, 3.0A 125V	AD
R825	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA	J201	QJAKH0011AJZZ	V	Jack, Rear AV Jack	AK
R826	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA		(VC-A412U/A413U)			
R831	VRD-RA2BE101J	V	100 1/8W Carbon	AB	J201	QJAKL0006AJZZ	V	Jack, Rear AV Jack	AL
R832	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA		(VC-H812U/H813U)			
R833	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA	J202	QJAKF0065AJZZ	V	Jack, Front AV Jack	AG
R839	VRD-RA2BE102J	V	1k 1/8W Carbon	AA		(VC-A412U/A413U)			
			(VC-H812U/H813U)						
R841	VRD-RA2BE183J	V	18k 1/8W Carbon	AA					
R843	VRD-RA2BE474J	V	470k 1/8W Carbon	AA					
R845	VRD-RA2BE474J	V	470k 1/8W Carbon	AA					

Ref. No.	Part No.	★	Description	Code
J202	QJAKG0006AJZZ	V	Jack, Front AV Jack (VC-H812U/H813U)	AH
P701	QPLGZ0883GEZZ	J	Plug, 8 Pin	AD
RMC801	RRMCU0081GEZZ	J	Remote Receiver	AG
	or			
RMC801	RRMCU0002AJZZ	V	Remote Receiver	AH
	or			
RMC801	RRMCU0062GEZZ	J	Remote Receiver	AG
	or			
RMC801	RRMCU0056GEZZ	J	Remote Receiver	AQ
SC301	QSOCN0611REN1	V	Socket, 6 Pin (VC-A412U/A413U)	AC
SC301	QSOCN0911REN1	V	Socket, 9 Pin (VC-H812U/H813U)	AD
SC601	QSOCN0695REZZ	V	Socket, 6 Pin	AB
SC602	QSOCZ0293GEZZ	J	Socket, 2 Pin	AC
SC701	QSOCN0795REZZ	V	Socket, 7 Pin	AC
SC702	QSOCZ0292GEZZ	J	Socket, 2 Pin	AC
SC801	QSOCZ0625CEZZ	V	Socket, 6 Pin	AC
TP201	QPLGN0447REZZ	V	Plug, 4 Pin	AA
W851	LHLDZ1962AJ00	V	Holder	AD
W852	LHLDZ1962AJ00	V	Holder	AD

DUNTKE5846TEV1(VC-A412U/H812U)
DUNTKE5846TEV2(VC-A413U/H813U)
OPERATION UNIT

RESISTORS

R882	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R883	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA
R884	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R885	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R886	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R887	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R888	VRS-CY1JF123J	V	12k 1/16W Metal Oxide	AA
R889	VRS-CY1JF563J	V	56k 1/16W Metal Oxide	AA
R890	VRD-RA2BE153J	V	15k 1/8W Carbon (VC-A413U/H813U)	AA
R897	VRD-RA2BE563J	V	56k 1/8W Carbon	AA
R898	VRD-RA2BE223J	V	22k 1/8W Carbon	AA

SWITCHES

S882	QSW-K0086GEZZ	J	Switch, Stop (VC-A412U/H812U)	AC
	or			
S882	QSW-K0004AJZZ	V	Switch, Stop (VC-A412U/H812U)	AB
S883	QSW-K0086GEZZ	J	Switch, REC	AC
	or			
S883	QSW-K0004AJZZ	V	Switch, REC	AB
S884	QSW-K0086GEZZ	J	Switch, Pause/Still	AC
	or			
S884	QSW-K0004AJZZ	V	Switch, Pause/Still	AB
S885	QSW-K0086GEZZ	J	Switch, FF (VC-A412U/H812U)	AC
	or			
S885	QSW-K0004AJZZ	V	Switch, FF (VC-A412U/H812U)	AB
S886	QSW-K0086GEZZ	J	Switch, Play (VC-A412U/H812U)	AC
	or			
S886	QSW-K0004AJZZ	V	Switch, Play (VC-A412U/H812U)	AB
S886	QSW-K0086GEZZ	J	Switch, FF (VC-A413U/H813U)	AC
	or			
S886	QSW-K0004AJZZ	V	Switch, FF (VC-A413U/H813U)	AB
S887	QSW-K0086GEZZ	J	Switch, Rew (VC-A412U/H812U)	AC
	or			
S887	QSW-K0004AJZZ	V	Switch, Rew (VC-A412U/H812U)	AB
S888	QSW-K0086GEZZ	J	Switch, Stop (VC-A413U/H813U)	AC
	or			
S888	QSW-K0004AJZZ	V	Switch, Stop (VC-A413U/H813U)	AB

Ref. No.	Part No.	★	Description	Code
S889	QSW-K0086GEZZ	J	Switch, Play (VC-A413U/H813U)	AC
	or			
S889	QSW-K0004AJZZ	V	Switch, Play (VC-A413U/H813U)	AB
S890	QSW-K0086GEZZ	J	Switch, Rew (VC-A413U/H813U)	AC
	or			
S890	QSW-K0004AJZZ	V	Switch, Rew (VC-A413U/H813U)	AB

MISCELLANEOUS PART

P881	QPLGZ0626CEZZ	V	Plug, 6 Pin	AF
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MECHANISM CHASSIS PARTS

1	LBNDK1011AJZZ	V	Tension Band Ass'y	AH
2	LBOSZ1007AJZZ	V	Tension Arm boss	AD
4	LBOSZ1006AJZZ	V	Cassette Stay L	AD
5	LCHSM0174AJZZ	V	Main Chassis Ass'y	AV
6	LHLDZ2016AJZZ	V	Loading Motor Block	AG
7	LPOLM0070GEZZ	J	Supply Pole Base Ass'y	AK
8	LPOLM0064GEZZ	J	Take-up Pole Base Ass'y	AM
9	MLEVF0518AJZZ	V	Take-up Loading Arm Ass'y	AF
10	MLEVF0519AJZZ	V	Supply Loading Arm Ass'y	AF
11	MLEVF0499AJZZ	V	Pinch Drive Lever Ass'y	AG
12	MLEVF0500GEZZ	J	Pinch Roller Lever Ass'y	AW
15	MLEVF0523AJZZ	V	Tension Arm Ass'y	AH
16	LANGF9620AJFW	V	A/C Head Plate	AG
17	MLEVP0271AJZZ	V	Shifter Drive Lever	AE
18	MLEVP0272AJZZ	V	Pinch Double Action Lever	AD
19	MLEVP0301AJZZ	V	Reverse Guide Lever Ass'y	AL
20	MLEVP0275AJZZ	V	Reverse Drive Lever	AD
21	MLEVP0292AJZZ	V	Slow Brake Lever	AE
22	MLEVP0290AJZZ	V	Open Lever	AD
23	MLEVP0293AJZZ	V	Clutch Lever	AE
24	MLEVP0324AJZZ	V	Supply Main Brake Ass'y	AF
25	MLEVP0325AJZZ	V	Take-up Main Brake Ass'y	AF
26	CLEVP0287AJZZ	V	Automatic Head Cleaner Ass'y	AG
27	MSLiP0010AJZZ	V	Shifter	AH
29	MSPRD0175AJFJ	V	Reverse Guide Spring 2	AE
30	MSPRT0402AJFJ	V	Loading Double Action Spring	AE
31	MSPRT0403AJFJ	V	Pinch Double Action Spring	AD
32	MSPRC0213AJFJ	V	Earth Spring	AC
33	MSPRT0416AJFJ	V	Tension Spring	AD
34	NBLTK0067AJ00	V	Reel Belt	AE
35	NDiV1078AJ00	V	Reel Disk	AE
36	NGERH1293AJZZ	V	Loading Connect Gear	AD
37	NGERH1295AJ00	V	Master Cam	AE
38	NGERH1294AJZZ	V	Casecon Drive Gear	AD
39	NGERH1270AJZZ	V	Take-up Loading Gear	AF
40	NGERH1271AJZZ	V	Supply Loading Gear	AD
41	NGERH1272AJZZ	V	Pinch Drive Cam	AE
43	NGERH1299AJZZ	V	Reel Relay Gear	AE
44	NGERW1070AJZZ	V	Worm Gear	AD
45	NGERW1066AJZZ	V	Worm Wheel Gear	AD
46	NiDR-0018AJZZ	V	Idler Wheel Ass'y	AK
47	NPLYV0162AJZZ	V	Motor Pulley	AD
48	NPLYV0163AJZZ	V	Limiter Pulley Ass'y	AM
49	NROLP0131GEZZ	J	Guide Roller	AL
50	NSFTP0032AJZZ	V	Tension Pole Adjuster	AB
51	MSPRC0217AJFJ	V	Guide Roller Spring	AC
52	PREFL1011AJZZ	V	Light Guide	AE
53	QCNW-8022AJZZ	V	FFC for Drum Motor	AD
55	QCNW-8021AJZZ	V	FFC for A/C Head	AD
56	QPWBF5243AJZZ	V	A/C Head PWB	AE
57	QSOCN0605REN1	V	Socket, 6 pin(for U.S.A.)	AB
57	QSOCN0696REZZ	V	Socket, 6 pin(for Canada)	AB
58	RHEDT0036AJZZ	V	Full Erase Head	AM
59	RHEDU0088GEZZ	J	A/C Head Ass'y	AV

VC-A412U/A413U
VC-H812U/H813U

Ref. No.	Part No.	★	Description	Code
60	RMOTM1078GEZZ	J	Loading Motor	AP
61	RMOTN2067GEZZ	J	Capstan D.D. Motor PWM	AY
62	RMOTP1139GEZZ	J	Drum Drive Motor (VC-H812U/H813U)	AT
62	RMOTP1151GEZZ	J	Drum Drive Motor (VC-A412U/A413U)	AT
63	DDRMW0029TEX1	V	Upper and Lower Drum Ass'y (VC-A412U/A413U)	BU
63	DDRMW0030TEX1	V	Upper and Lower Drum Ass'y (VC-H812U/H813U)	BU
65	QBRSK0041GEZZ	J	Drum Earth Brush	AD
66	XBPSD26P05J00	V	Drum Drive Motor Mounting Screw (SW2.6P+5S)	AA
67	PGiDC0056GEFW	J	Drum Base	AL
68	QPWBF5468AJZZ	V	PWB(LDG Motor)	AE
69	QPLGZ0292GEZZ	J	Socket(LDG Motor)	AE
70	MSPRC0223AJFJ	V	Azimuth Spring	AC
71	MSPRC0224AJFJ	V	Height Adjusting Spring	AC

SCREW, NUTS AND WASHERS

201	XBPSD26P08000	V	Screw 2.6P+8S A/C Head	AA
202	LX-HZ3082GEZZ	J	WSW 2.6+6 (AC)	AD
203	XJPSD26P06000	V	Screw, 2.6P+6 (For Capstan Motor)	AA
207	XHPSD30P08WS0	V	Screw, C3.0P+8S (For Drum Base)	AA
208	XRESJ30-06000	V	E-Ring, E-3	AA
209	XWHJZ31-03052	V	Washer, W3.1-5.2-0.3	AC
210	XWHJZ31-04052	V	Washer, W3.1-5.2-0.4	AC
211	XWHJZ31-05052	V	Washer, W3.1-5.2-0.5	AC
212	XWHJZ31-06052	V	Washer, W3.1-5.2-0.6	AC
213	XWHJZ31-07052	V	Washer, W3.1-5.2-0.7	AC
214	PSPAP0009AJZZ	V	Reverse Guide Adjusting Nut	AB
216	LX-WZ1041GE00	J	CW 2.6-6-0.5 CAM	AA
218	XBPSD30P08J00	V	Drum Base Mounting Screw (SW 3P+8S)	AA
219	LX-WZ1098GE00	J	CW 2.6-4.7-0.5 RED	AB
220	LX-BZ3096GEFD	J	Tilt Adjusting Screw	AA
221	XBPSD26P06000	V	Azimuth Adjusting Screw 2.6+6S	AA
222	LX-BZ3197GEFD	J	Screw (A/C Head)	AD
223	XWHJZ31-08052	V	Washer, W3.1-5.2-0.8	AC
224	LX-RZ3015GEFJ	J	CS Washer	AB

CASSETTE HOUSING CONTROL PARTS

300	CHLDX3081TEV2	V	Cassette Housing Control Ass'y	AX
301	LANGF9592AJFW	V	Upper Plate	AL
302	LHLDX1028AJ00	V	Frame (L)	AH
303	LHLDX1032AJ00	V	Frame (R)	AH
304	LHLDX1030AJZZ	V	Holder (L)	AE
305	LHLDX1031AJZZ	V	Holder (R)	AE
306	MLEVF0469AJFW	V	Proof Lever (R)	AE
307	MLEVP0281AJ00	V	Door Open Lever	AD
308	MSLiF0076AJFW	V	Slider	AK
309	MSPRD0151AJFJ	V	Proof Lever (R) Spring	AB
310	MSPRD0166AJFJ	V	Drive Gear (R) Spring	AE
311	MSPRP0175AJFJ	V	Cassette Spring	AE
312	MSPRT0381AJFJ	V	Double Action Spring	AC
313	NGERH1278AJZZ	V	Drive Gear L	AE
314	NGERH1309AJZZ	V	Drive Gear R	AE
315	NGERR1008AJ00	V	Double Action Rack Gear	AE
316	NGERR3005AJFW	V	Drive Angle Gear	AG
317	NSFTD0041AJFD	V	Main Shaft	AH

Ref. No.	Part No.	★	Description	Code
CABINET PARTS				
600	GCABA3136AJSM	V	Top Cabinet	AT
601	GCABB1223AJKB	V	Main Frame	AQ
602	GCOVA2072AJKZ	V	Antenna Terminal Cover (VC-A412U/A413U)	AE
602	GCOVA2073AJKZ	V	Antenna Terminal Cover (VC-H812U/H813U)	AE
603	PSLDM4566AJFW	V	Shield Angle	AD
604	XHPSD26P06WS0	V	Screw	AA
605	XHPSD30P06WS0	V	Screw	AA
606	LANGK0197AJFW	V	Top Cabinet Fix Angle	AG
607	XEPSD30P14XS0	V	Screw	AB
608	LX-HZ3047GEFF	J	Screw	AA
609	XEBSD30P12000	V	Screw	AA
610	LX-HZ3087GEFN	J	Screw	AB
612	LHLDZ1962AJ00	V	Sensor LED Cover	AD
613	PGUMS0026AJZZ	V	Foot Cushion	AB
614	TLABM4182AJZZ	V	Model Label(VC-H813U)	AC
614	TLABM4183AJZZ	V	Model Label(VC-A413U)	AC
614	TLABM4186AJZZ	V	Model Label(VC-H812U)	AC
614	TLABM4188AJZZ	V	Model Label(VC-A412U)	AC
614	TLABM4208AJZZ	V	Model Label (VC-A412U for Canada)	AC
614	TLABM4204AJZZ	V	Model Label (VC-A413U for Canada)	AC
614	TLABM4206AJZZ	V	Model Label (VC-A812U for Canada)	AC
615	XJPSD30P10WS0	V	Screw	AA
616	TLABV1643AJZZ	V	Feature Label	AC

FRONT PANEL PARTS

500	CPNLC2697TEV1	V	Front Panel Ass'y (VC-H813U)	AU
500	CPNLC2708TEV1	V	Front Panel Ass'y (VC-H812U)	AU
500	CPNLC2716TEV1	V	Front Panel Ass'y (VC-A413U)	AU
500	CPNLC2720TEV1	V	Front Panel Ass'y (VC-A412U)	AV
500-1	—————	-	Front Panel (Not Replacement Item)	—
500-3	HDECQ1967AJSA	V	Cassette Flap(VC-H812U)	AH
500-3	HDECQ1970AJSA	V	Cassette Flap(VC-A412U)	AL
500-3	HDECQ2146AJSA	V	Cassette Flap(VC-H813U)	AH
500-3	HDECQ2165AJSA	V	Cassette Flap(VC-A413U)	AH
500-4	HDECQ2148AJSA	V	Window Dec. (VC-A413U/H813U)	AH
500-4	HDECQ2157AJSA	V	Window Dec.(VC-H812U)	AH
500-4	HDECQ2168AJSA	V	Window Dec.(VC-A412U)	AH
500-5	JBTN-2940AJSB	V	REC Button (VC-A412U/H812U)	AE
500-6	JBTN-2941AJSA	V	SET-UP Button (VC-A412U/H812U)	AF
500-6	JBTN-3018AJSA	V	SET-UP Button (VC-A413U/H813U)	AE
500-7	MSPRD0103AJFJ	V	Cassette Spring	AB
500-8	JBTN-3019AJSA	V	PLAY Button (VC-A413U/H813U)	AF
500-9	JBTN-3021AJSA	V	POWER Button (VC-A413U/H813U)	AE
500-10	JBTN-3022AJSA	V	CHANNEL Button (VC-A413U/H813U)	AB
502-1	JBTN-2942AJSA	V	PLAY Button (VC-A412U/H812U)	AH
502-2	LHLDZ2066AJZZ	V	Button Holder (VC-A412U/H812U)	AC

Ref. No.	Part No.	★	Description	Code
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SUPPLIED ACCESSORIES

ACCESSORIES

TiNS-3738AJZZ	V	Operation Manual (for U.S.A)	AF
TiNS-3757AJZZ	V	Operation Manual (for Canada)	AH
RRMCG0235AJSB or	V	Infrared Remote Control Unit	AZ
RRMCG0235AJSC	V	Infrared Remote Control Unit	AZ
QCNW-8115AJZZ or	V	75 Ohm Coaxial Cable	AG
QCNW-0322AJZZ	V	75 Ohm Coaxial Cable	AM

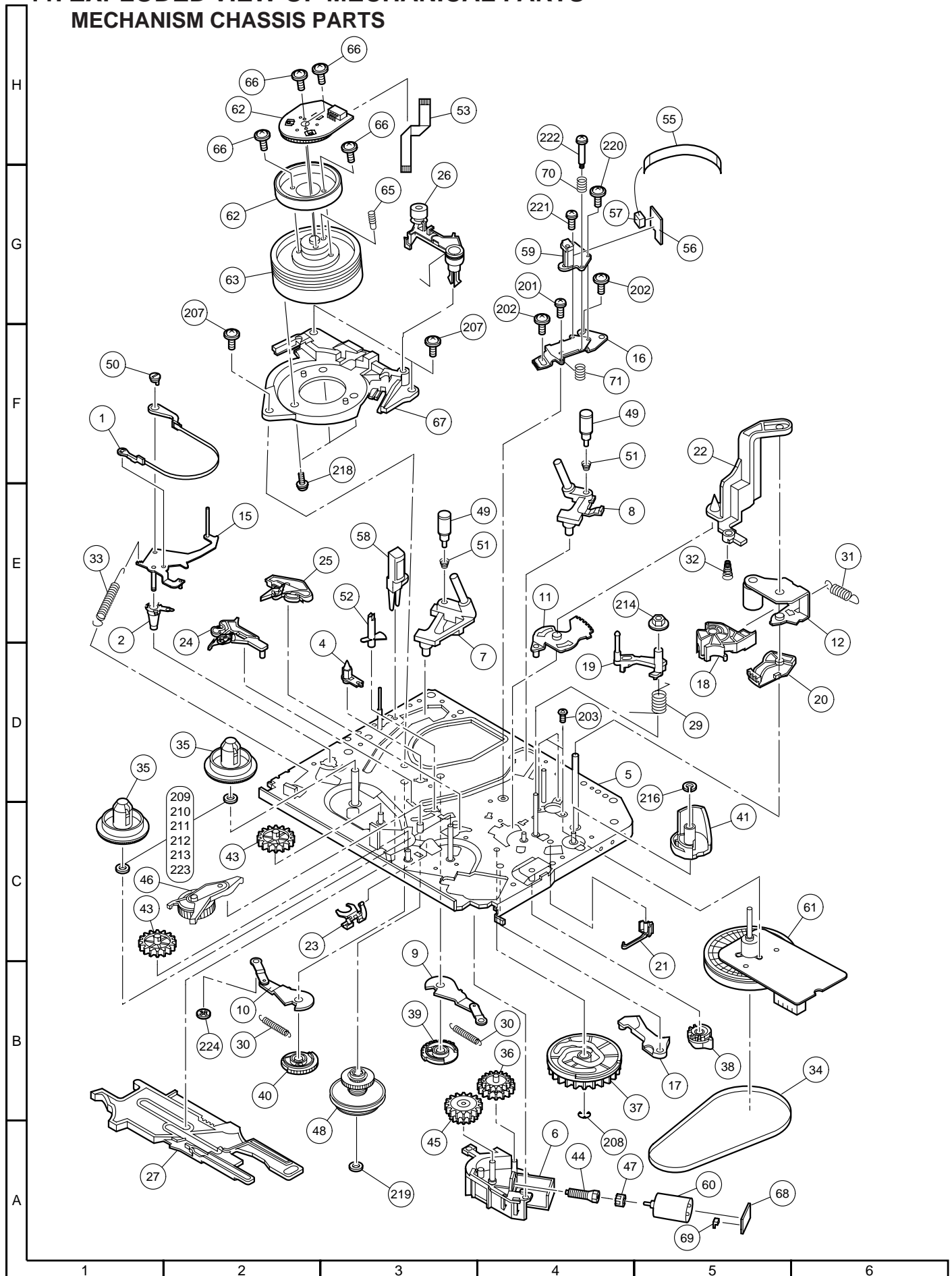
ACCESSORY**(NOT REPLACEMENT ITEM)**

TGAN-0001AJZZ	-	Warranty Card(U.S.A Only)	—
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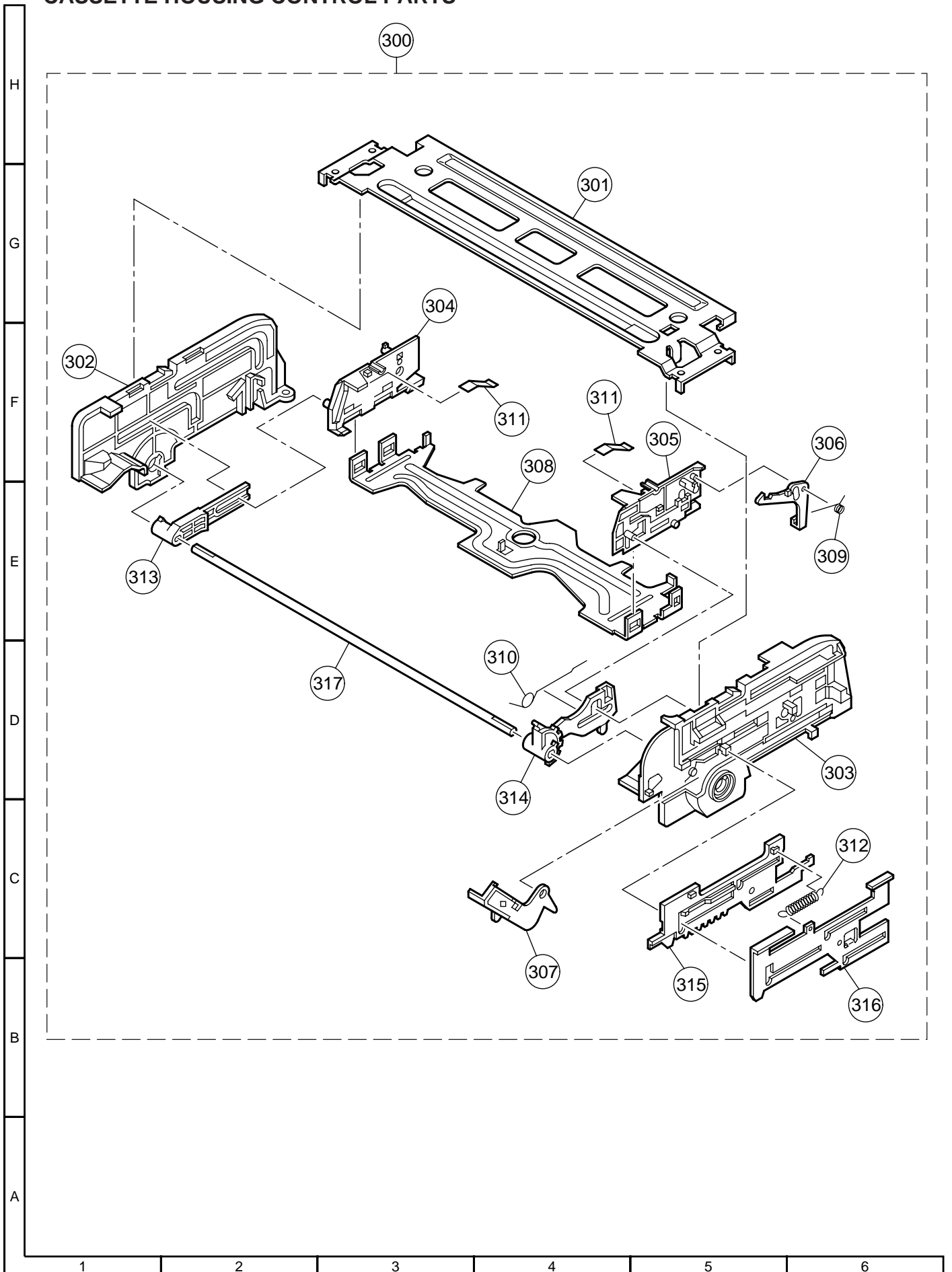
PACKING PARTS**(NOT REPLACEMENT ITEM)**

SPAKC4260AJZZ	-	Packing Case(VC-H813U)	—
SPAKC4261AJZZ	-	Packing Case(VC-A413U)	—
SPAKC4264AJZZ	-	Packing Case(VC-H812U)	—
SPAKC4266AJZZ	-	Packing Case(VC-A412U)	—
SPAKX1073AJZZ	-	Packing Add. (VC-A412U/H812U)	—
SPAKX1083AJZZ	-	Packing Add. (VC-A413U/H813U)	—
TLABK0005AJZZ	-	No. Label	—

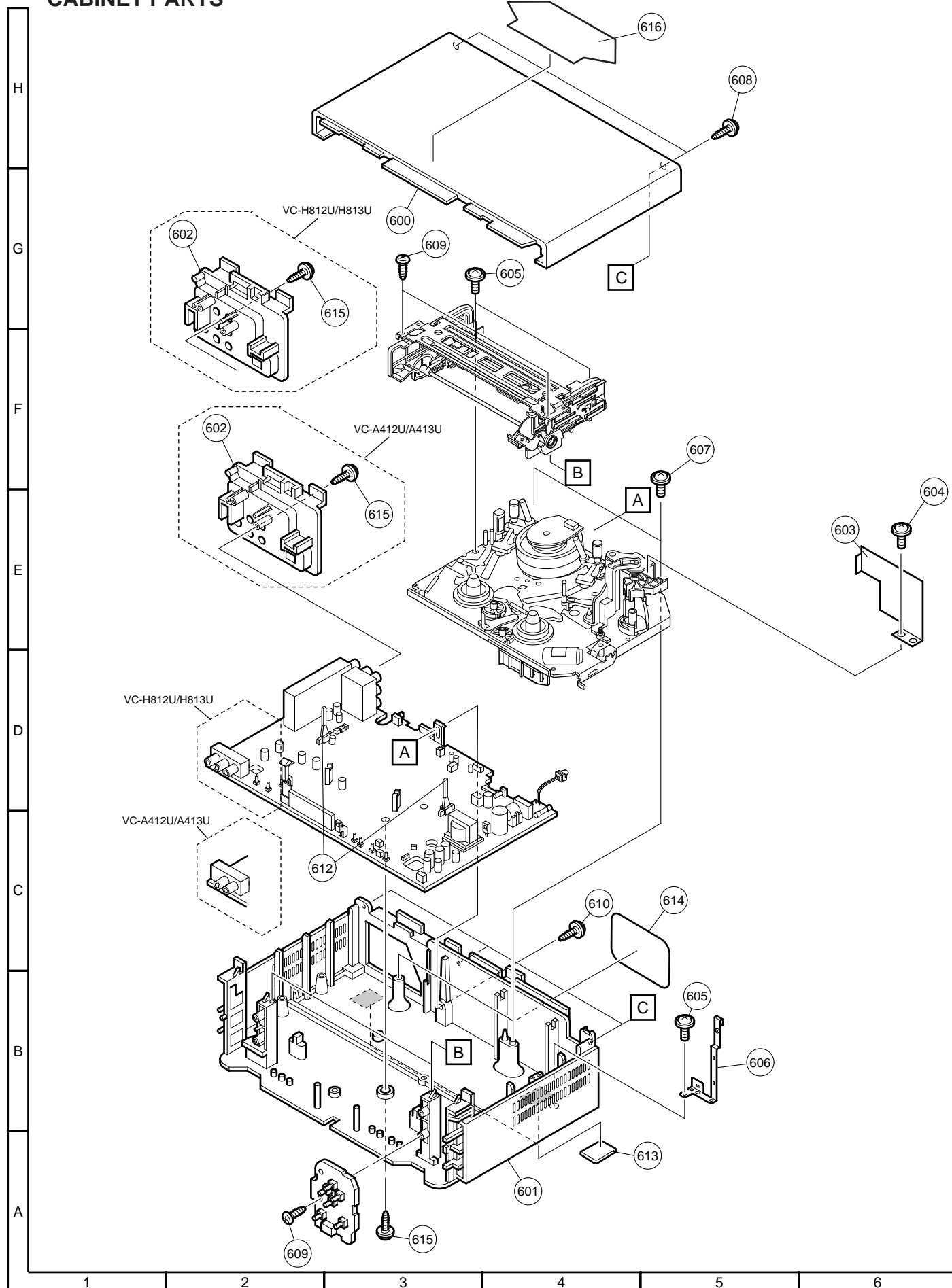
11. EXPLODED VIEW OF MECHANICAL PARTS MECHANISM CHASSIS PARTS



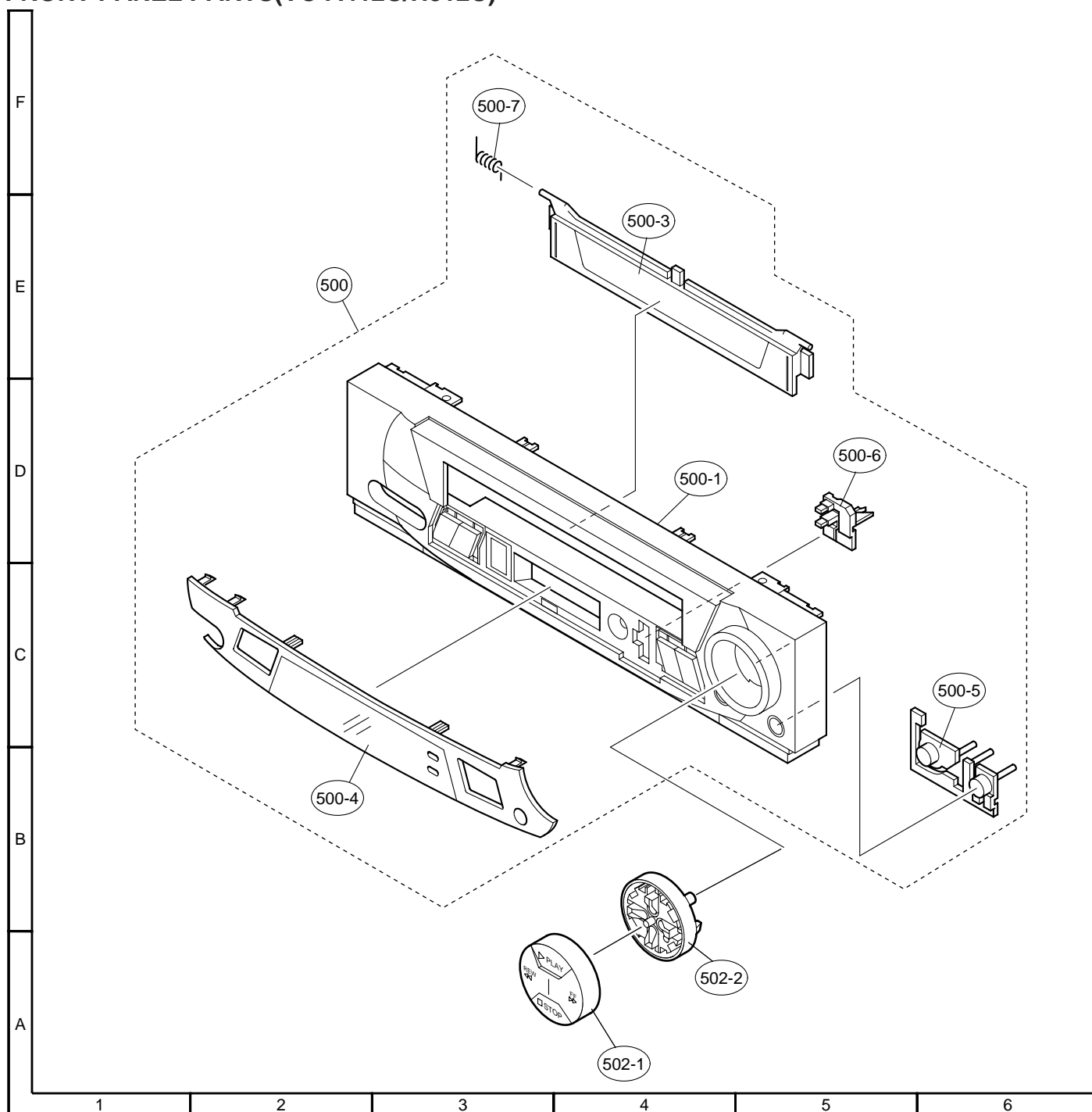
CASSETTE HOUSING CONTROL PARTS



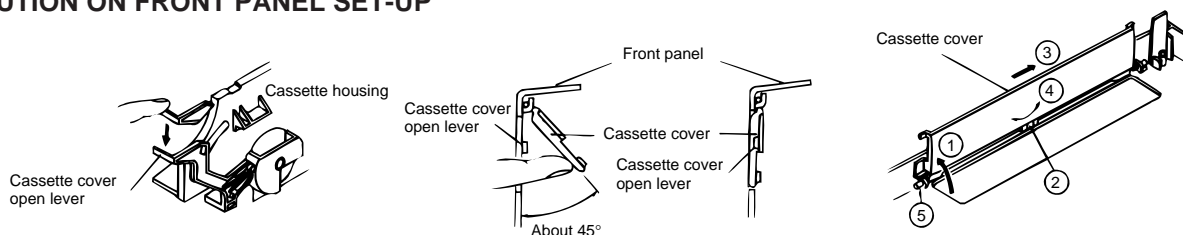
CABINET PARTS



FRONT PANEL PARTS(VC-A412U/H812U)



PRECAUTION ON FRONT PANEL SET-UP



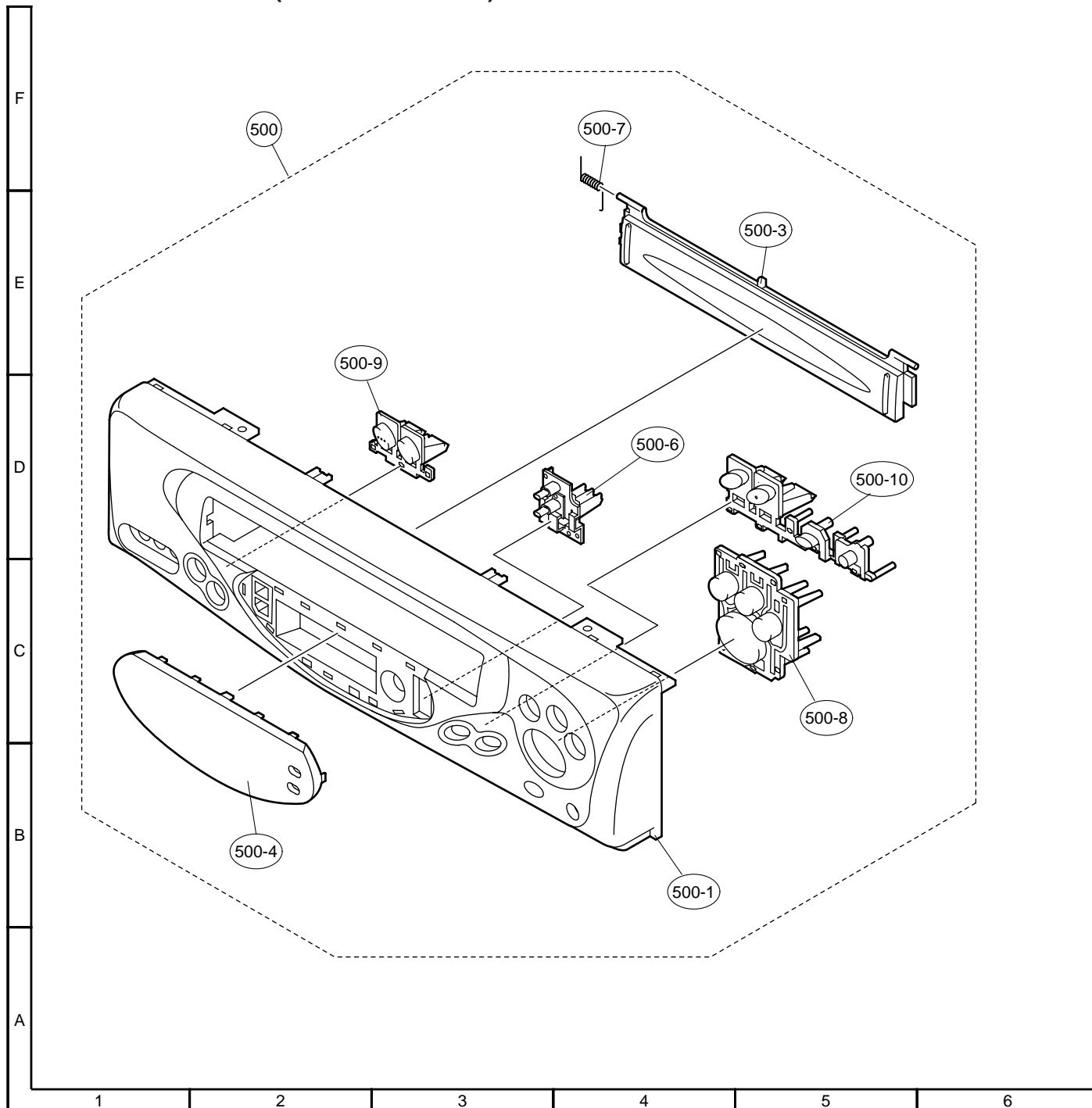
Before attaching the front panel in position, make sure that the cassette cover open lever is in its right place (lower-most). If it is out of position, push it down with a finger.

Keep the cassette cover about 45° open and make sure that the cassette cover open lever is between the front panel and the cassette cover. Now fix the front panel in place.

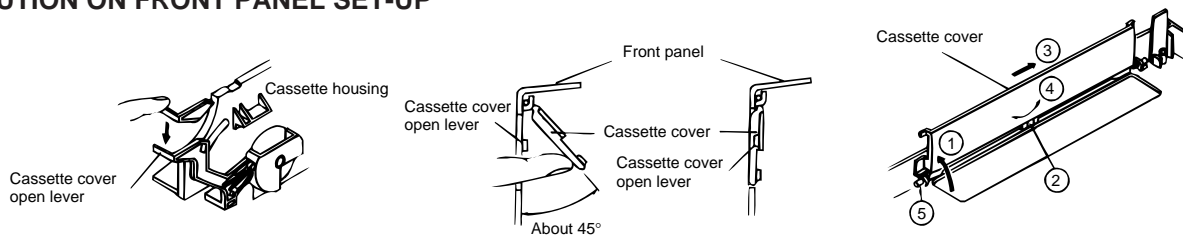
Do not mount the front panel with the cassette cover tilted too open. Otherwise the cassette cover might wrongly run on the cassette housing.

Removing the cassette compartment cover.
① Open the cassette compartment cover fully.
② Remove the center positioner.
③ Slide the cover to the right.
④ Slightly bend the cover.
⑤ Draw out the left-side rod.

FRONT PANEL PARTS(VC-A413U/H813U)



PRECAUTION ON FRONT PANEL SET-UP



Before attaching the front panel in position, make sure that the cassette cover open lever is in its right place (lower-most). If it is out of position, push it down with a finger.

Keep the cassette cover about 45° open and make sure that the cassette cover open lever is between the front panel and the cassette cover. Now fix the front panel in place.

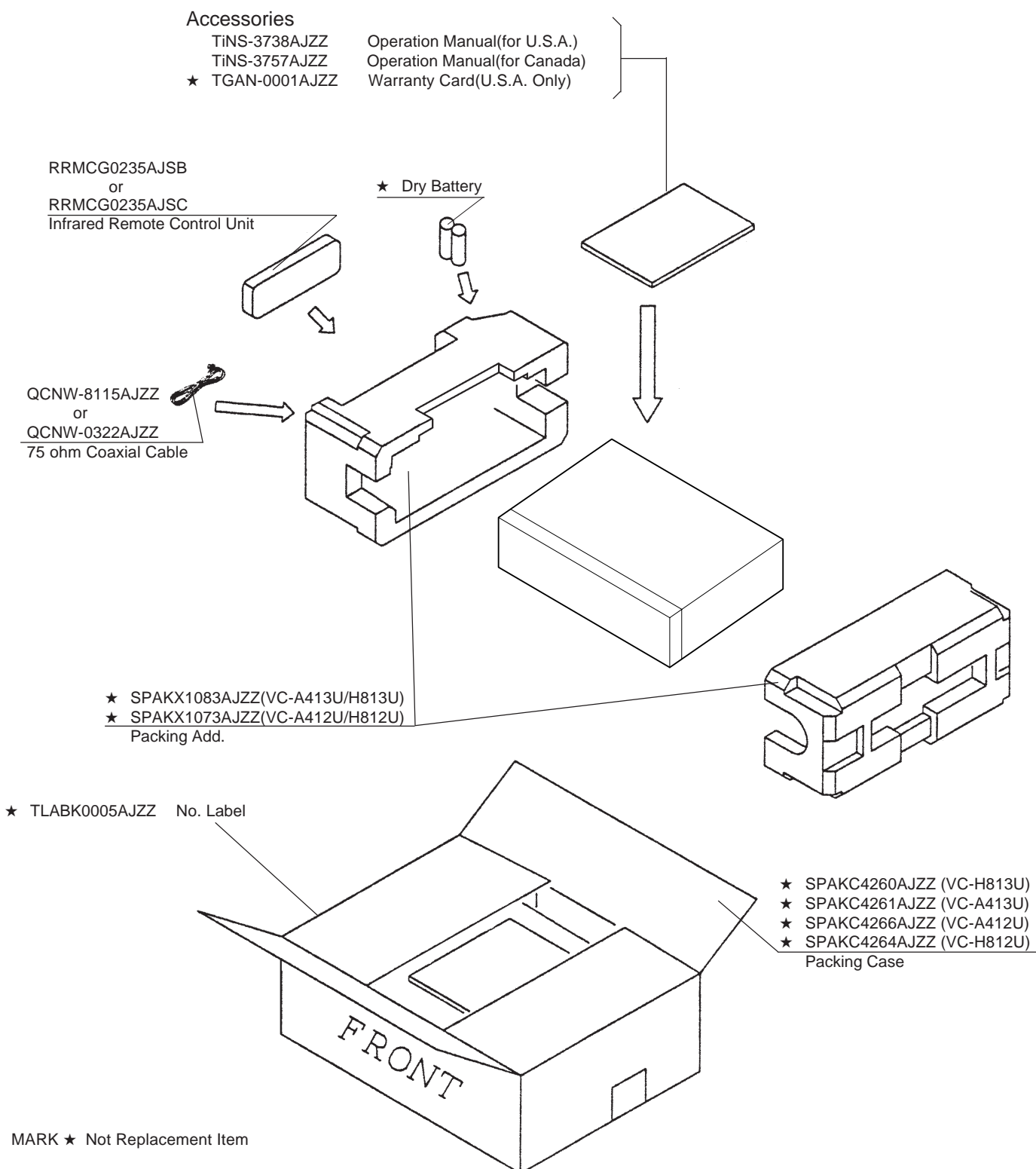
Do not mount the front panel with the cassette cover tilted too open. Otherwise the cassette cover might wrongly run on the cassette housing.

Removing the cassette compartment cover.
① Open the cassette compartment cover fully.
② Remove the center positioner.
③ Slide the cover to the right.
④ Slightly bend the cover.
⑤ Draw out the left-side rod.

12. PACKING OF THE SET

■ Setting position of the Knobs

RF conv. CH. preset	at "3" channel
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